Environmental Report (ER)
Greensville County, Virginia

Government Center Master Plan

March 2014

Prepared for:

Greensville County
Attn. Dave Whittington
1781 Greensville County Circle
Emporia, Virginia 23847

Prepared by:

Enviro-Utilities
Experts on the Ground

P.O. Box 73133
Richmond, Virginia 23235
804-796-3911
804-796-1090 (fax)
www.enviro-utilities.com

Executive Summary

Greensville County, Virginia is proposing to expand the existing Greensville County Government Center with additional infrastructure including multiple phases of building construction and supplemental parking. Currently, buildings 1-8 are existing; 9-12 are designed as future offices; and 13-22 are designed as future buildings and parking.

The purpose of this Environmental Report (herein after, the Report) is to provide an Environmental Review (ER) to Greensville County as part of their environmental due diligence.

The Report evaluates the environmental consequences, if any, for the proposed project of expanding the existing Greensville County Government Center. The environmental resources evaluated include: Purpose and Need, Alternative Site Analysis, Land use/Important Farmland/Formally Classified Land, Floodplains, Wetlands, Historic Properties, Threatened and Endangered Species.

An onsite evaluation was conducted at the proposed project site. In addition to onsite reviews, numerous government databases were evaluated, and state, federal and local representatives were contacted concerning the potential environmental resources within the project site.

The results of this evaluation indicated that the proposed project area does not have any major environmental concerns or consequences.

There are existing wetlands or waters of the US on the project site.

There were no historic resource identified on the Department of Historic Resources (DHR) V-CRIS site, within the Area of Potential Effect (APE) (0.25 miles) beyond the proposed project location. However, during consultation with the DHR it was noted that given the project setting, impacts to archaeological and architectural resources are possible. A review of DHR archives indicates that the project area has not been systematically surveyed for cultural resources. If contacted by the Corps or any other Federal agency, DHR would recommend a Phase I cultural resource survey to aid in the identification of historic properties within the Area of Potential Effects (APE), defined by the Federal agency in consultation with DHR. We would recommend (1) a Phase I archaeological survey of all areas of ground disturbance, provided the areas have not already been disturbed; and (2) an architectural survey of the project's APE for all buildings 50 years old and older. The results of the survey must be coordinated with DHR so that we may review and comment on the adequacy of the effort and the consultant's recommendations for National Register of Historic Places eligibility.

The proposed project area contained no threatened and endangered species of concern.

The project site was not considered important farmland, as the project site is an existing road.

All proposed project area is located within flood zone X.

Table 3.0 below summarizes the results in a concise manner.

Summary of Environmental Report (ER) Results

Environmental Assessment Component		Greensville County Government Center Master Plan
Land Use	General Land Use	No; None
	Important Farmland	No; None
	Formally Classified Lands	No; None
Floodplains		No; None
Wetlands		Yes; None
Historic Properties		No; None
Biological Resources	Threatened & Endangered Species	No; None

*Environmental Resource; Presence = Yes (Environmental Resource is documented onsite or on adjacent properties); Absence = No (Environmental Resources was not identified onsite or on adjacent properties)

**Affect on Environmental Resource; none, slight, moderate, or severe

Table of Contents

1.0 Purpose and Need of the Proposal

1.1 Project Description (Proposed Action)

This proposed project is the Greensville County Mast Plan update in which the expansion additional infrastructure including multiple phases of building construction and supplemental parking. Currently, buildings 1-8 are existing; 9-12 are designed as future offices; and 13-22 are designed as future buildings and parking. See excerpt below, Figure A, of Greensville County Master Plan layout.

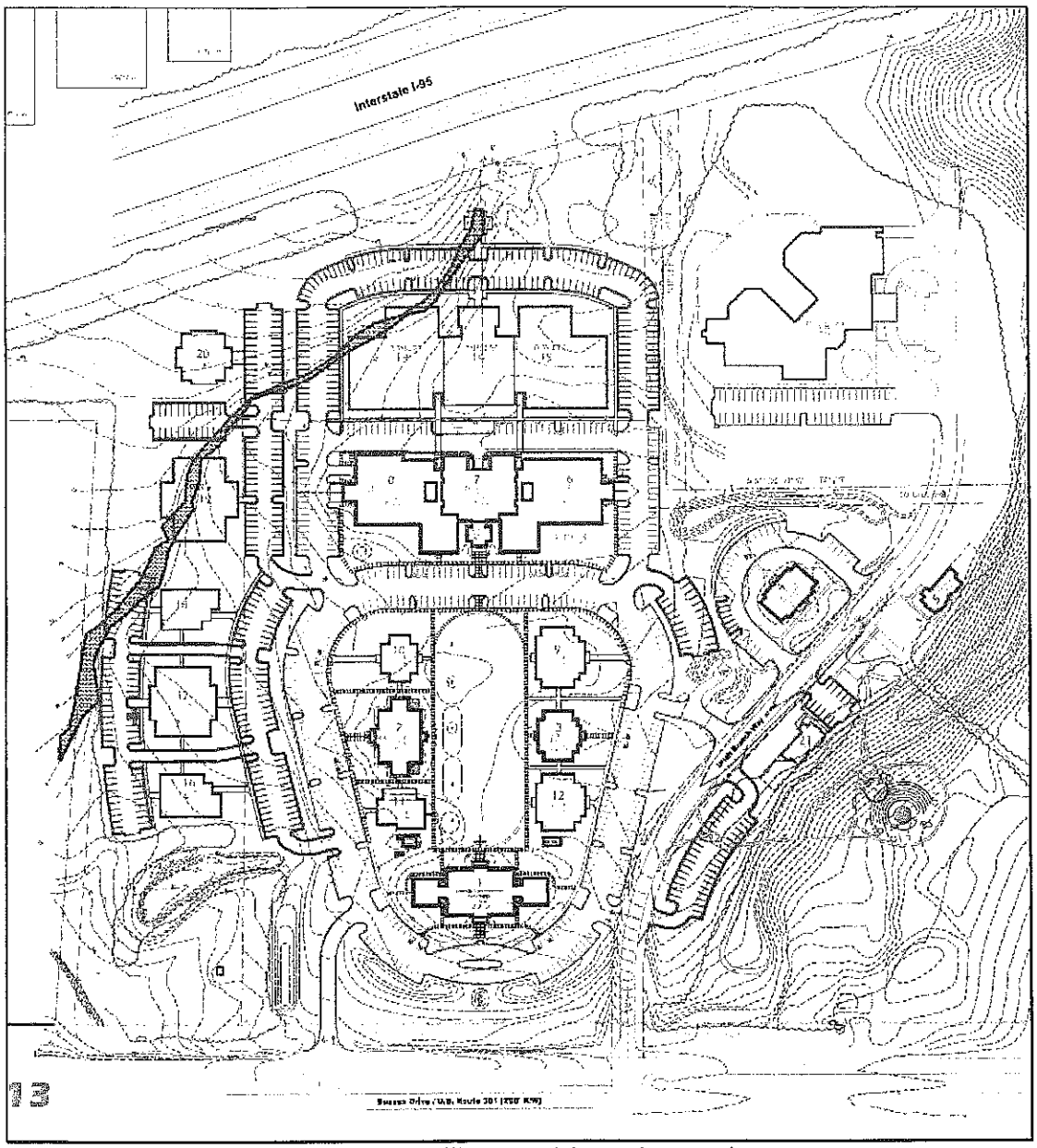


Figure A. Greensville County Master Plan overview.

The proposed project area is located at Latitude: 36° 44'11"N / Longitude: 77° 30'52"N.

This Environmental Report (ER) evaluates approximately 40 acres for the Greensville County Government Center Master Plan update expansion project to update any potential environmental consequences.

1.2 Purpose and Need of the Proposal

The Purpose and Need of this proposal is to further expand the existing infrastructure and associated parking for the Greensville County Government Center in order to provide the facilities necessary to serve the citizens of the County.

2.0 Alternatives to the Proposed Action

There are no Alternatives to the Proposed Action for this proposal. Eight buildings and associated parking exist on the subject site. The proposed action is to fruther expand the existing site in order to accommodate growth and need for the area.

3.0 Affected Environment/Environmental Consequences

The following table, Table 3.0, summarizes the environmental evaluation methods used for the proposed Greensville County Government Center Master Plan update project.

Table 3.0 Summary of Environmental Evaluation Methods

Environmental Assessment Component		Methods Implemented for Report
Land Use	General Land Use	Review of the City of Emporia Comprehensive Plan and specific site zoning requirements.
	Important Farmland	Review of NRCS Farmland Protection Act
	Formally Classified Lands	Review of online databases of NPS, BLM, USFS, BIA, State Agencies.
Floodplains		Review of FEMA maps
Wetlands		Review of National Wetlands Inventory Maps and onsite delineation by Wetlands Specialist.
Historic Properties		National Historic Preservation Act, Section 106 regulations guidance, Virginia Dept. of Historic Resources V-CRIS database
Biological Resources	Threatened & Endangered Species	"Project Reviews in Virginia" online via USFWS and discussions with local agency representative; Coordination with Division of Conservation and Recreation - Division of Natural Heritage; Coordination with Department of Game and Inland Fisheries.

3.1 Greensville County Government Center Master Plan

(all figures referenced for the subject project are located in Exhibit 3.1)

This site is located at 1781 Greensville County Circle, Emporia, Virginia 23847. The project area is approximately 40 acres surrounding the existing Government Center (see Figure 1 in Attachment 1, for project location map).

3.1.1 Land Use

3.1.1.1 General Land Use

The total land area for the proposed project site is approximately 40 acres. The proposed site currently houses the existing Government Center Complex. It is within close proximity to one residence located south of the property and one business located east of the property, across US 301.

3.1.1.1.1 Affected Environment

The proposed project does not appear to affect the General Land Use.

3.1.1.1.2 Environmental Consequences

The proposed project does not pose any consequences to the environment.

3.1.1.1.3 Mitigation

No mitigation is deemed necessary, as the proposed project does not impact or affect the General Land Use.

3.1.1.2 Important Farmland

According to the Natural Resources Conservation Service (NRCS), "The Farmland Protection Policy Act (FPPA) is intended to minimize the impact Federal programs have on the unnecessary and irreversible conversion of farmland to nonagricultural uses...For the purpose of FPPA, farmland includes prime farmland, unique farmland, and land of statewide or local importance... It can be forest land, pastureland, cropland, or other land, but not water or urban built-up land." The proposed project site is not considered Important Farmland. The Farmland Conversion Impact Rating was not applied to this site as the proposed area surrounds an existing county government development and does not contain any farmable, agricultural land. This site is not considered Prime, Unique, Statewide or Local Important Farmland.

3.1.1.2.1 Affected Environment

Important Farmland is not affected within the proposed project site, as it is not considered Important Farmland.

3.1.1.2.2 Environmental Consequences

This proposed project site is not considered Important Farmland, nor is farmland going to be removed from production due to this proposed project. Subsequently, there are no adverse environmental affects to Important Farmland.

3.1.1.2.3 Mitigation

Mitigation is not deemed necessary. The project site is not considered Important Farmland.

3.1.1.3 Formally Classified Lands

The United States Geologic Service (USGS), National Park Service (NPS), and the U.S. Fish and Wildlife Service (Service) database systems were reviewed for any potential Classified Lands in proximity to the proposed sites. This project site does not contain, nor is it within proximity to (1.0 mile radius), any national parks and monuments; national natural landmarks; national battlefield park sites; national historic site and parks; wilderness areas; wild and scenic and recreational rivers; wildlife refuges; national seashores, lake shores and trails; state parks; Bureau of Land Management (BLM) administered lands; national forests and grasslands; or Native American owned lands and leases administered by the Bureau of Indian Affairs (BIA).

3.1.1.3.1 Affected Environment

Formally Classified Lands are not affected by the project site because the aforementioned Classified Lands do not exist within or near the proposed project site.

3.1.1.3.2 Environmental Consequences

This proposed project site is not considered Formally Classified Lands. No environmental consequences exist within or near the proposed project site because Classified Lands do not exist within or near the project site.

3.1.1.3.3 Mitigation

No mitigation is deemed necessary as no Classified Lands exist within or near the project site (1.0 mile radius).

3.1.2 Floodplains

This project site is located within Flood Insurance Rate Map (FIRM) Zone X. According to the *Definitions of FEMA Flood Zone Designations,* "Zone X is the area determined to be outside the 500-year flood and protected by levee from 100-year flood." See Figure 2 in Attachment 1.

3.1.2.1 Affected Environment

The proposed project site has no effect on floodplains.

3.1.2.2 Environmental Consequences

There are no environmental consequences because the project site is located within 100- or 500- year floodplain.

3.1.2.3 Mitigation

No mitigation is deemed necessary as the project site is not located within the 100- or 500- year floodplain.

3.1.3 Wetlands

According to Section 404 of the Clean Water Act, wetlands are "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil."

The National Wetlands Inventory (NWI) database, provided by the US Fish and Wildlife Service (USFWS), was used as a preliminary tool for the evaluation of the presence of wetlands within the boundary of the proposed project. The NWI identified one area on the northern boundary of the project area for the proposed Greensville County Government Master Plan update project area. See Figure 3 in Attachment 1. Field verification was conducted and this area identified by the NWI is not within the identified project limits.

Additionally, field verification (wetlands delineation) was conducted on March 24, 2014 on the subject site using the Routine Determination Method as outlined in the *1987 Corps of Engineers Wetland Delineation Manual*. Both wetlands and Waters of the US were identified on site. See Figure 4 in Attachment 1 for the results of the wetlands delineation.

3.1.3.1 Affected Environment

Both wetlands and Waters of the US were identified onsite, which are subject to the jurisdiction of the US Army Corps of Engineers (ACOE), the Virginia Department of Environmental Quality (VDEQ) and the Virginia Marine Resources Commission (VMRC). If impacts are proposed in the future within these identified areas, permits for development within these areas will be required for ACOE and VDEQ, and possibly VMRC.

3.1.3.2 Environmental Consequences

Both wetlands and Waters of the US were identified onsite, which are subject to the jurisdiction of the ACOE, VDEQ and VMRC. If impacts are proposed in the future within these areas, permits for development within these areas will be required for ACOE and the VDEQ, and possibly the VMRC. However, impacts proposed to these subject resources does not pose major environmental consequences.

3.1.3.3 Mitigation

Mitigation may be deemed necessary for impacts proposed to the wetlands and water of the US documented onsite. As noted in the regulatory guidelines set forth by the ACOE and VDEQ, impacts to wetlands or waters of the US that are greater than 1/10 acre and 300 linear feet will be required to complete compensatory mitigation during the permitting process.

3.1.4 Historic Properties

Historic properties are defined as any prehistoric or historic district, site, building, structure, or objects included in or eligible for inclusion in the *National Register of Historic Places*.

The Area of Potential Effects (APE) is defined as the geographic area or areas within which a project may directly or indirectly cause changes in the character or use of historic properties, if they exist. It is not necessary for an historic property to be present in order to define an APE. A desktop review of historic properties was completed on February 5, 2014 using the Virginia Cultural Resource Information System (V-CRIS). An APE of one quarter mile (0.25) was defined for the proposed project after consideration of the potential physical impacts of land disturbance and construction, particulate air quality, and potential visual and auditory effects on the surrounding community. The V-CRIS database search returned zero (0) archeological or architectural resource records (see Attachment 2).

A project review application was submitted February 5, 2014 to the Virginia Department of Historic Resources (DHR) via the Electronic Project Information Exchange (ePIX) (DHR File 2014-3098). Correspondence was received from DHR regarding the project review on March 4, 2014 (see attached email #02957). In summary, DHR is recommending a Phase I cultural resource survey to aid in the identification of historic properties within the APE, to be defined by the Federal agency in consultation with DHR. Given the project setting, impacts to archaeological and architectural resources are possible. A review of DHR archives indicates that the project area has not been systematically surveyed for cultural resources. DHR would recommend (1) a Phase I archaeological survey of all areas of ground disturbance, provided the areas have not already been disturbed; and (2) an architectural survey of the project's APE for all buildings 50 years old and older. The results of the survey must be coordinated with DHR so that they may review and comment on the adequacy of the effort and the consultant's recommendations for National Register of Historic Places eligibility.

3.1.4.1 Affected Environment

A review of DHR archives indicates that the project area has not been systematically surveyed for cultural resources. DHR has recommended (1) a Phase I archaeological survey of all areas of ground disturbance, provided the areas have not already been disturbed; and (2) an architectural survey of the project's APE for all buildings 50 years old and older.

3.1.4.2 Environmental Consequences

The proposed development project is not considered to pose any effect to historical properties. It is anticipated that a Phase I archaeological survey will result in no findings for archeological and architectural resources and subsequently will not pose any adverse environmental consequences with regard to historic resources. In the event that historic resources are identified, action will be taken to mitigate prior to development.

3.1.4.3 Mitigation

It is anticipated that a Phase I archaeological survey will result in no findings for archeological and architectural resources and subsequently will not pose any adverse environmental consequences with regard to historic resources. In the event that historic

resources are identified, action will be taken to mitigate prior to development, in coordination with DHR.

3.1.5 Biological Resources

3.1.5.1 Threatened and Endangered Species

Federal Reviews

A review of federally threatened and endangered species was conducted using the U.S. Fish and Wildlife Service (Service) Project Reviews in Virginia protocol. Completion of the review process involves multiple steps, as described below.

Project Reviews
Introduction
Step 1 - Action Area
Step 2 - Official Species List
Step 3 - State Coordination
Step 4 - Suitable Habitat
Step 5 - Critical Habitat
Step 6a - Eagle Nests
Step 6b - Eagle Concentration Areas
Step 7 - Determinations
Step 8 - Project Review Package

Identification of the Action Area in Step 1 involves the use of the Service's Information, Planning and Consultation System (IPaC). An Official Species List is generated through IPaC for use in Step 2, and includes a list of species with potential to occur in the vicinity of the action area and a map of the action area among other things. If the Official Species List species list indicates that there are no listed, proposed or candidate species found in the action area, the procedure continues to Step 5. If the Official Species List indicates that listed, proposed or candidate species may be present in the action area the procedure continues to Step 3. Steps 5-8 are required at all times, while steps 3 and 4 are dependent on Step 2.

The Official Species List lists identified (3) endangered species with the potential to be affected by the proposed project; American chaffseed *(Schwalbea americana)*, dwarf wedgemussel *(Alasmidonta heterodon)*, and Roanoke logperch *(Percina rex)*. As a result, the procedure continued to Step 3. All species are added to the Service's Species Conclusion Table. At this point, state coordination is needed, and includes the Virginia Department of Game and Inland Fisheries (DGIF) Fish and Wildlife Information Service (FWIS), and the Virginia Department of Conservation and Recreation Department of Natural Heritage (DCR-DNH) (see State Review Section below).

Federally designated critical habitat occurs within: Bland, Lee, Scott, Smyth, Russell, Tazewell, Washington, Wise, and Wythe counties in Virginia. Therefore, there is no

critical habitat designated for this project. The Center for Conservation Biology VaEagles Nest Locator provides the locations of active bald eagle nests in Virginia and The Virginia Field Office's Bald Eagle Map Tool is used to help determine if the action area intersects within a designated bald eagle concentration area. The action area for the proposed project does not intersect with a bald eagle nest buffer or concentration area.

State Reviews

The DGIF FWIS was reviewed for potential protected species within the proposed project boundary; the alewife *(Alosa pseudoharengus)* and Red-cockaded Woodpecker *(Picoides borealis)* were added to the Species Conclusion Table. The DCR-DNH database was reviewed for natural heritage resources within the proposed project boundary; the barking treefrog (*Hyla gratiosa*) was added to the Species Conclusion Table.

After researching each species habitat requirements, a 'no effect" determination was made for all species in the species conclusion table. An online project review certification letter was generated by the Service for completion of the final step – project review package. The completed project review package was submitted electronically to the Service on February 25, 2014 and is enclosed in Attachment 3. Electronic correspondence was received on March 6, 2014 in which the Service concurred with the Species Conclusion Table findings/determinations. The DGIF project review package was submitted electronically on March 17, 2014. Agency correspondence will be submitted under separate cover. The DCR-DNH project review package was submitted electronically on March 19, 2014. Agency correspondence will be forwarded under separate cover.

In summary, based on the reviews conducted and as described above, it is not anticipated that the proposed site contains threatened, endangered, or candidate species. It does not contain designated critical habitat, is unlikely to disturb bald eagles, and does not intersect with an eagle concentration area.

3.1.5.1.1 Affected Environment

It is anticipated that a 'no effect' determination will be made for protected species on the proposed site. The results of the project review by the DGIF and DCR-DNH will be forwarded under separate cover. The Service has provided a no effect determination for the subject project and therefore there is no affected environment for federal species.

3.1.5.1.2 Environmental Consequences

It is anticipated that a 'no effect' determination will be made for protected species on the proposed site and as a result there will be no environmental consequences. The results of the project review by the DGIF and DCR-DNH will be forwarded under separate cover. The Service has provided a no effect determination for the subject project and, therefore, there is no environmental consequences for federal species.

3.1.5.1.3 Mitigation

No mitigation will be deemed necessary if the DGIF and DCR-DNH concur that the proposed project does not pose adverse effects on the threatened and endangered species. The results of the project review by the DGIF and DCR-DNH will be forwarded under separate cover. The Service has provided a no effect determination for the subject project and, therefore, there is no mitigation required for federal species.

4.0 Summary of Mitigation

The Environmental Report (ER) evaluated the environmental consequences of the proposed Greensville County Government center Master Plan update in Greensville County, Virginia. The environmental resources evaluated included: Land use, Floodplains, Wetlands, Historic Properties and Biological Resources.

Based on the findings of the onsite evaluation, as well as database reviews and interviews with local, state and federal officials, the summary of the mitigation needed follows:

- Land Use (general land use, important farmland, formally classified lands)

No mitigation is deemed necessary; the proposed site does not impact or affect the General Land Use. The proposed project does not require changes to the zoning or the Greensville County Comprehensive Plan. The proposed sites are not considered Important Farmland or Formally Classified Lands.

- Floodplains

No mitigation is deemed necessary. The proposed site is within flood zone X.

- Wetlands

Mitigation may be deemed necessary for wetlands and waters of the US, if impacts are proposed at the time of permitting development phases of the proposed project. Coordination and application will be made with the ACOE, VDEQ and VMRC at that time.

- Historic Properties

Mitigation is not anticipated to be necessary. DHR has recommended (1) a Phase I archaeological survey of all areas of ground disturbance, provided the areas have not already been disturbed; and (2) an architectural survey of the project's APE for all buildings 50 years old and older; of which the subject project should not have *adverse effect* on historic properties.

- Biological Resources (threatened and endangered species, fish and wildlife, vegetation)

Mitigation is not anticipated to be necessary. Online database and project reviews of the Service, DCR-DNH and DGIF databases did not identify any species of concern within the area of potential effect. The Service concurred with the findings of no effect and thus no mitigation required. The DGIF and DCR-DHR review/concurrence letter will be forwarded under separate cover.

In summary, mitigation for impacts to wetlands and waters of the US is anticipated as the environmental concern for this Environmental Review for the Greensville County Government Center Master Plan located in Greensville County, Virginia.

5.0 Attachments

Attachment 1: Figures

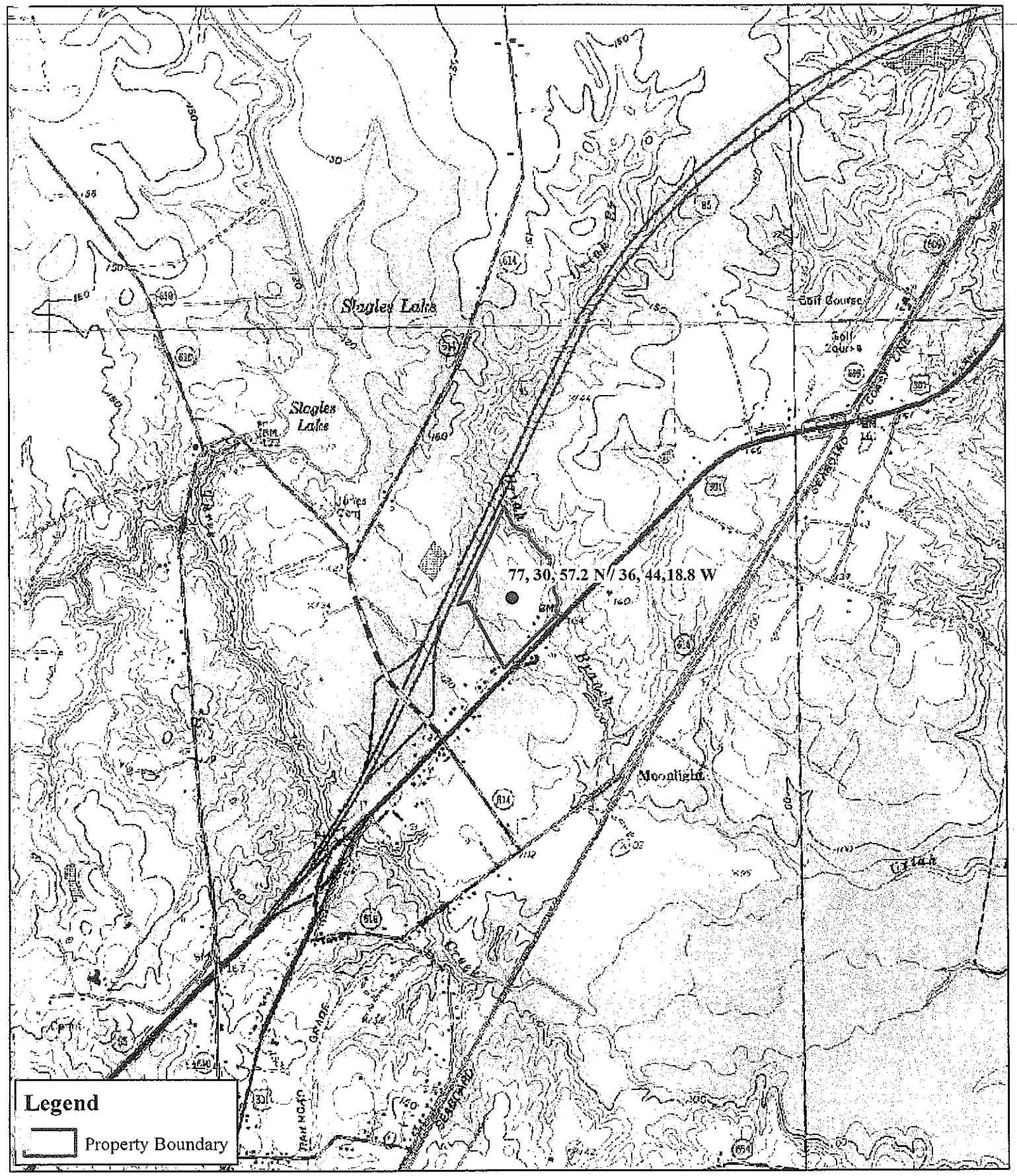


Figure 1
Site Location Map
Government Center Master Plan
Greensville County, Virginia

1 inch = 2,000 feet

Enviro-Utilities
Experts on the Ground
PO Box 73133
Richmond, Virginia 23235
804.796.3911 804.796.1090 (fax)

Figure 2
FEMA Map
Government Center Master Plan
Greensville County, Virginia

MAP SCALE 1" = 500'

250 0 500 1000

FEET

METER

NFIP NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0157C

FIRM

FLOOD INSURANCE RATE MAP

GREENSVILLE COUNTY, VIRGINIA
AND INCORPORATED AREAS

PANEL 157 OF 350

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
EMPORIA, CITY OF	510047	0157	C
GREENSVILLE COUNTY	510073	0157	C

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.

MAP NUMBER
51081C0157C

EFFECTIVE DATE
JULY 7, 2009

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

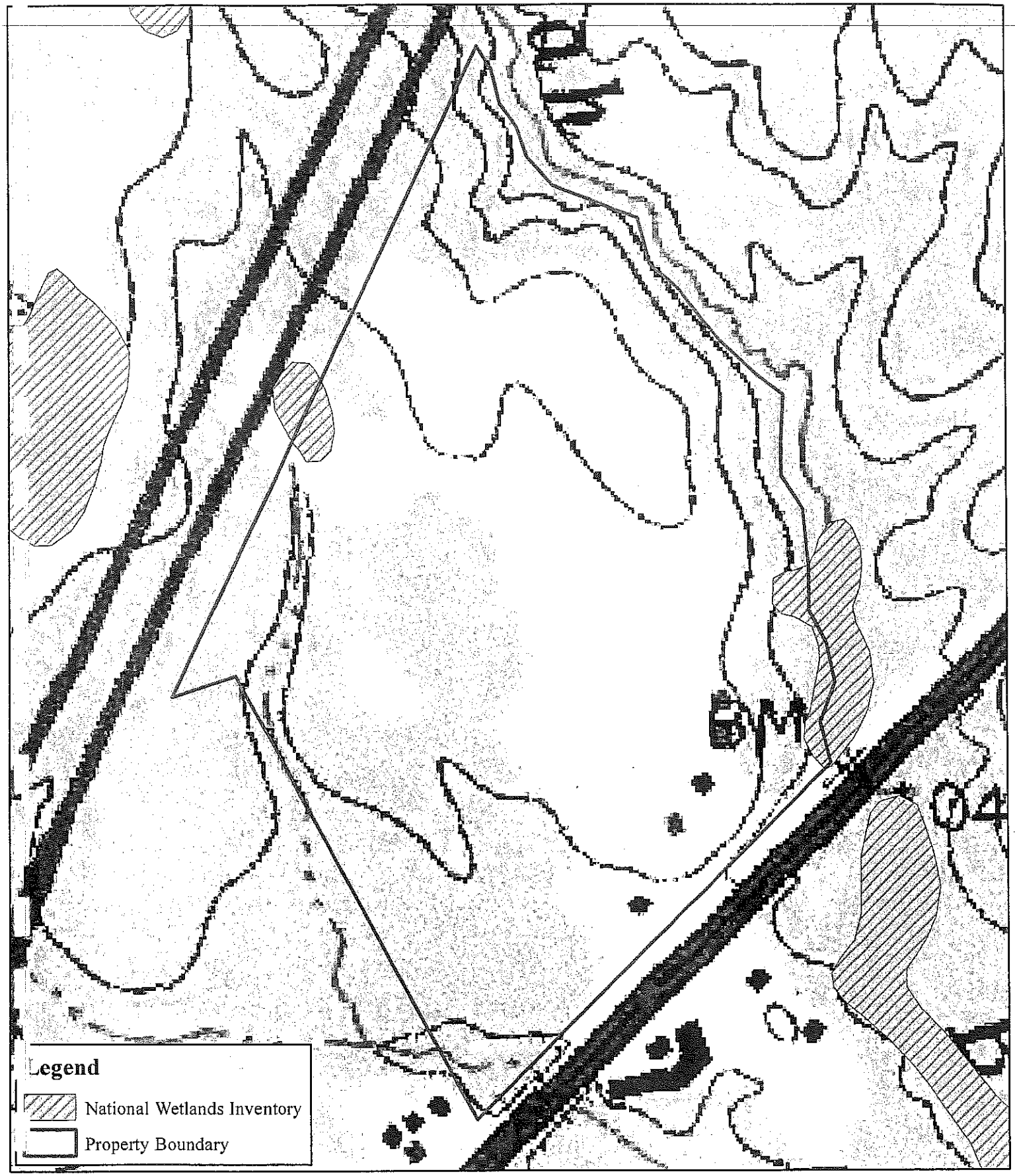


Figure 3
National Wetlands Inventory Map
Government Center Master Plan
Greensville County, Virginia

1 inch = 300 feet

Enviro-Utilities
Experts on the Ground
PO Box 73133
Richmond, Virginia 23235
804.796.3911 804.796.1090 (fax)

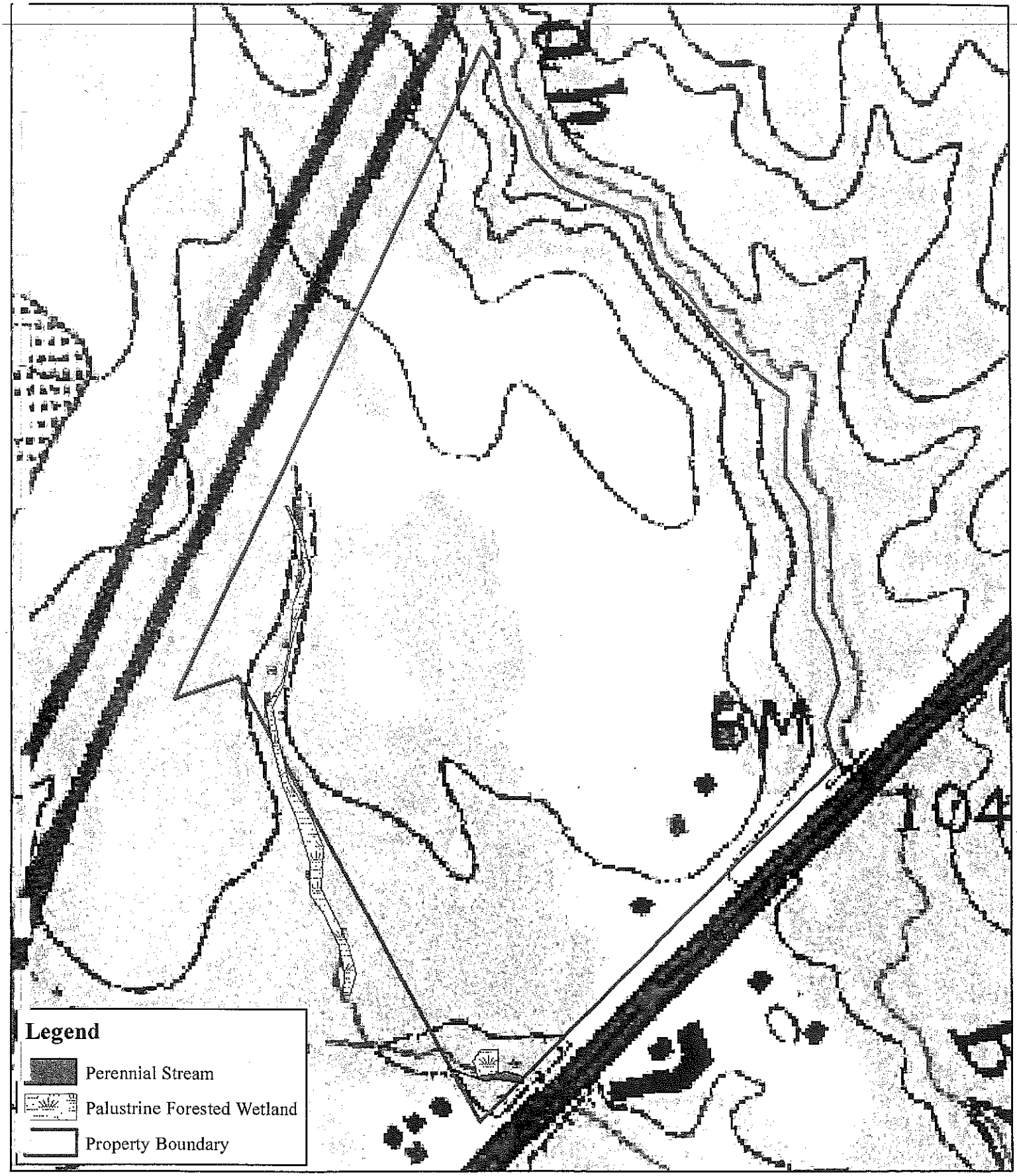


Figure 4
Approximate Location of Wetlands Map
Government Center Master Plan
Greensville County, Virginia

1 inch = 300 feet

Enviro-Utilities
Experts on the Ground
PO Box 73133
Richmond, Virginia 23235
804.796.3911 804.796.1090 (fax)

Attachment 2: Historic Properties Review

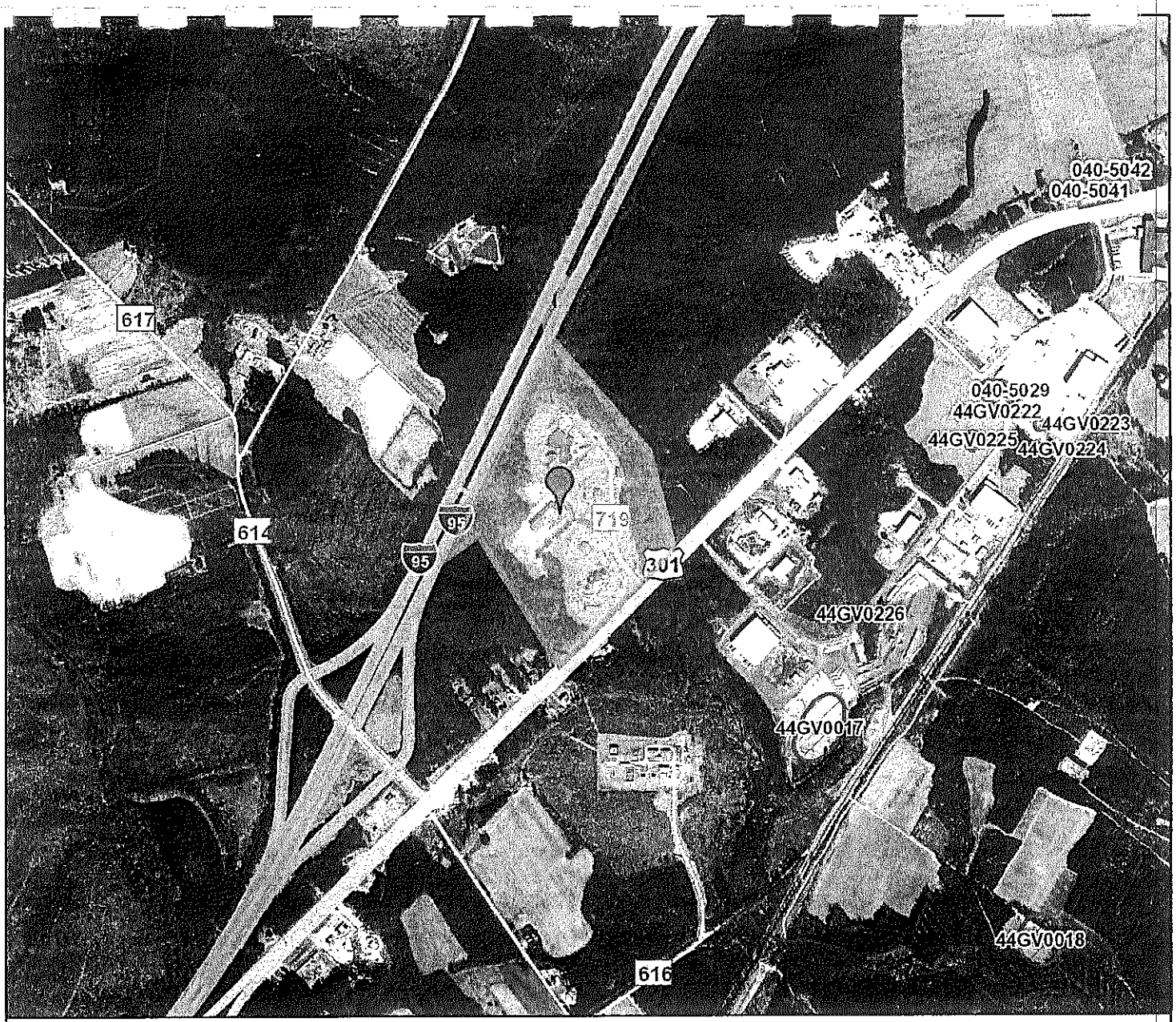
Virginia Dept. of Historic Resources

V-CRIS

Virginia Cultural Resource Information System

Legend

- Architecture Resources
- Architecture Labels
- Individual Historic District Properties
- Archaeological Resources
- Archaeology Labels
- Roads (24,000)
  - Interstate
  - US Primary Highway
  - State Primary Highway
  - Secondary
- Streams (NHD)
- County Boundaries



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Feet

0 500 1000 1500 2000

1:18,056 / 1"=1,505 Feet

Title: Greensville County Government Center Master Plan

Date: 2/5/2014

DISCLAIMER: Records of the Virginia Department of Historic Resources (DHR) have been gathered over many years from a variety of sources and the representation depicted is a cumulative view of field observations over time and may not reflect current ground conditions. The map is for general information purposes and is not intended for engineering, legal or other site-specific uses. Map may contain errors and is provided "as-is". More information is available in the DHR Archives located at DHR's Richmond office.

Notice if AE sites: Locations of archaeological sites may be sensitive the National Historic Preservation Act (NHPA), and the Archaeological Resources Protection Act (ARPA) and Code of Virginia §2.2-3705.7 (10). Release of precise locations may threaten archaeological sites and historic resources.

Gregory LaBudde Mar 4

to me

Dear Ms. Heckler,

The Department of Historic Resources (DHR) has received through our ePIX system the Greensville County Government Center Master Plan project (DHR File No. 2014-3098) for our comments. It is our understanding that the project involves the expansion of the existing Greensville County Government Center with additional infrastructure, including multiple phases of building construction and supplemental parking.

Our comments are provided only as technical assistance in the assessment of potential impacts of this project on historic resources. We have not been notified by the U.S. Corps of Engineers (Corps) or any other Federal agency of their involvement in this project. If this project becomes an undertaking subject to Section 106 of the National Historic Preservation Act, the responsible Federal agency must notify our office of their involvement and seek our concurrence on the potential effects of this project on historic properties.

Given the project setting, impacts to archaeological and architectural resources are possible. A review of our archives indicates that the project area has not been systematically surveyed for cultural resources. If contacted by the Corps or any other Federal agency, DHR would recommend a Phase I cultural resource survey to aid in the identification of historic properties within the Area of Potential Effects (APE), defined by the Federal agency in consultation with DHR. We would recommend (1) a Phase I archaeological survey of all areas of ground disturbance, provided the areas have not already been disturbed; and (2) an architectural survey of the project's APE for all buildings 50 years old and older. The results of the survey must be coordinated with DHR so that we may review and comment on the adequacy of the effort and the consultant's recommendations for National Register of Historic Places eligibility.

Cultural resource surveys must be conducted by qualified professionals in accordance the *Archeology and Historic Preservation: Secretary of the Interior's Standards and Guidelines* (48 FR 44716-42) and DHR's *Guidelines for Conducting Historic Resources Survey in Virginia* (October 2011). Two hardcopies and one digital copy of the resulting report should be submitted to our office for review and approval prior to any ground disturbance. Once we have the results of the survey, we would be able to advise you whether any further investigations and/or mitigative actions are warranted.

Thank you for the opportunity to provide technical assistance on this project. If you have any questions, please do not hesitate to contact me.

Sincerely,

Greg LaBudde, Archaeologist
Division of Review and Compliance
Department of Historic Resources
2801 Kensington Avenue
Richmond, VA 23221
phone: 804-482-6103
fax: 804-367-2391
gregory.labudde@dhr.virginia.gov

Attachment 3: Biological Resources Review

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Virginia Ecological Services Field Office
6669 SHORT LANE
GLOUCESTER, VA 23061
PHONE: (804)693-6694 FAX: (804)693-9032
URL: www.fws.gov/northeast/virginiafield/

Consultation Tracking Number: 05E2VA00-2014-SLI-1060 February 12, 2014
Project Name: Greensville County Government Center Master Plan

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project.

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having

similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2) (c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment

United States Department of Interior
Fish and Wildlife Service

Project name: Greensville County Government Center Master Plan

Official Species List

Provided by:

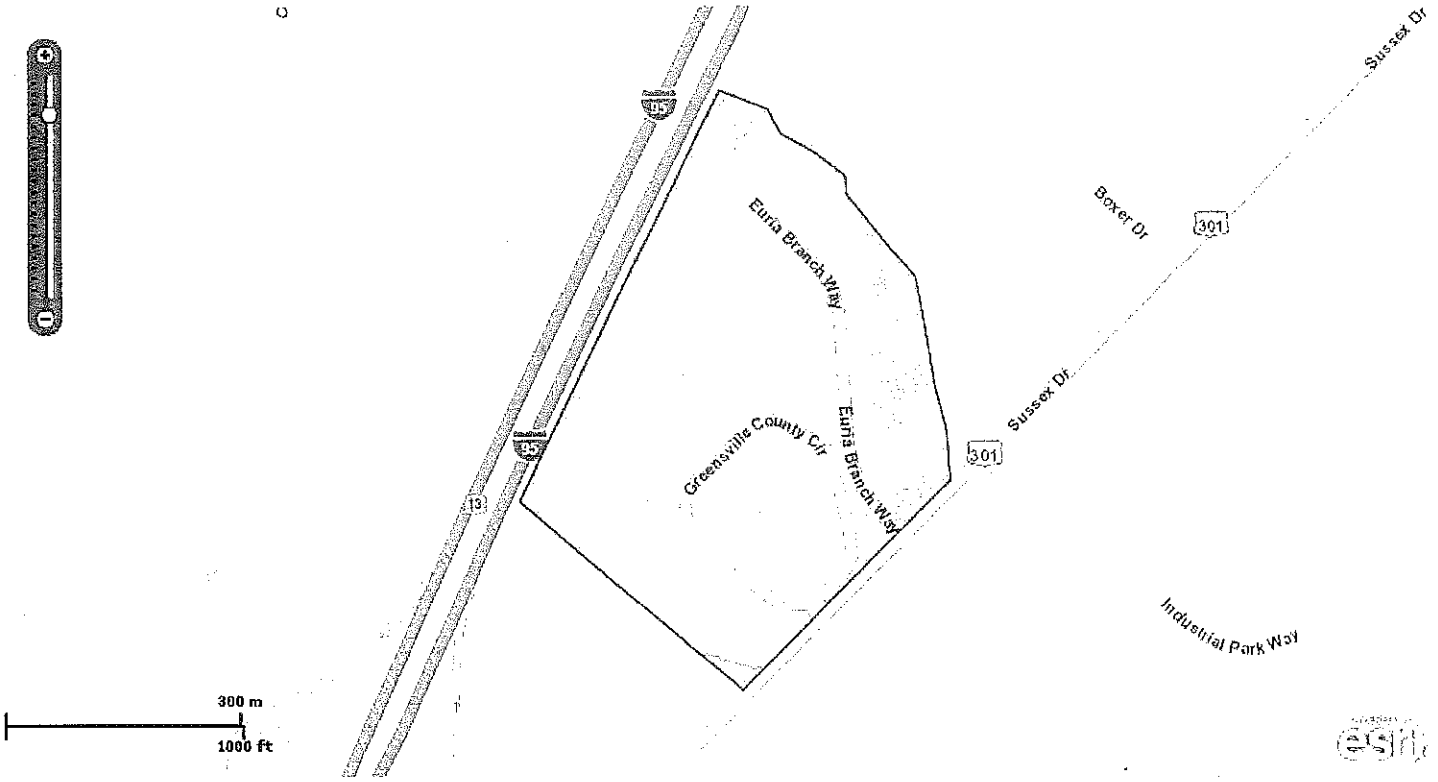
Virginia Ecological Services Field Office
6669 SHORT LANE
GLOUCESTER, VA 23061
(804) 693-6694
http://www.fws.gov/northeast/virginiafield/

Consultation Tracking Number: 05E2VA00-2014-SLI-1060
Project Type: Development
Project Description: Proposed project includes expansion of the existing Greensville County Government Center with additional infrastructure including multiple phases of building construction and supplemental parking. Currently, buildings 1-8 are existing; 9-12 are designed as future offices; and 13-22 are designed as future buildings and parking (see attached site plan for square footage, location, etc.).

United States Department of Interior
Fish and Wildlife Service

Project name: Greensville County Government Center Master Plan

Project Location Map:



Project Coordinates: MULTIPOLYGON (((-77.5129856 36.7371777, -77.5159935 36.7347554, -77.5191966 36.7369378, -77.5163202 36.7416541, -77.5156153 36.7414413, -77.51542 36.7411558, -77.5149072 36.7409323, -77.5144802 36.7406752, -77.5144652 36.7404612, -77.5134792 36.7395154, -77.5132088 36.7382859, -77.5130457 36.7377744, -77.5129856 36.7371777)))

Project Counties: Greensville, VA

United States Department of Interior
Fish and Wildlife Service

Project name: Greensville County Government Center Master Plan

Endangered Species Act Species List

There are a total of 3 threatened, endangered, or candidate species on your species list. Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Critical habitats listed on the **Has Critical Habitat** lines may or may not lie within your project area. See the **Critical habitats within your project area** section further below for critical habitat that lies within your project. Please contact the designated FWS office if you have questions.

American chaffseed *(Schwalbea americana)*
Listing Status: Endangered

Dwarf wedgemussel *(Alasmidonta heterodon)*
Population: Entire
Listing Status: Endangered

Roanoke logperch *(Percina rex)*
Population: Entire
Listing Status: Endangered

Critical habitats that lie within your project area

There are no critical habitats within your project area.

VaFWIS Search Report Compiled on 2/5/2014, 3:33:35 PM

Help

Known or likely to occur within a **3 mile radius around point 36.7381120 -77.5159358** in **081 Greensville County, 183 Sussex County, 595 Emporia City, VA**

View Map of Site Location

453 Known or Likely Species ordered by Status Concern for Conservation (displaying first 31) (31 species with Status* or Tier I** or Tier II**)

BOVA Code	Status*	Tier**	Common Name	Scientific Name
010214	FESE	I	Logperch, Roanoke	Percina rex
040228	FESE	I	Woodpecker, red-cockaded	Picoides borealis
010347	SE	I	Sunfish, blackbanded	Enneacanthus chaetodon
040110	SE	I	Rail, black	Laterallus jamaicensis
050034	SE	I	Bat, Rafinesque's eastern big-eared	Corynorhinus rafinesquii macrotis
040129	ST	I	Sandpiper, upland	Bartramia longicauda
040293	ST	I	Shrike, loggerhead	Lanius ludovicianus
040385	ST	I	Sparrow, Bachman's	Aimophila aestivalis
040379	ST	I	Sparrow, Henslow's	Ammodramus henslowii
020044	ST	II	Salamander, Mabee's	Ambystoma mabeei
060081	ST	II	Floater, green	Lasmigona subviridis
060173	FSST	II	Pigtoe, Atlantic	Fusconaia masoni
010070	ST	IV	Shiner, whitemouth	Notropis alborus
040292	ST		Shrike, migrant loggerhead	Lanius ludovicianus migrans
010038	FC	IV	Alewife	Alosa pseudoharengus
040093	FS	II	Eagle, bald	Haliaeetus leucocephalus
060175	FS	II	Slabshell, Roanoke	Elliptio roanokensis
060029	FS	III	Lance, yellow	Elliptio lanceolata
070105	FS	III	Crayfish, Chowanoke	Orconectes virginiensis
030063	CC	III	Turtle, spotted	Clemmys guttata
010077		I	Shiner, bridle	Notropis bifrenatus
040225		I	Sapsucker, yellow-bellied	Sphyrapicus varius
040319		I	Warbler, black-throated green	Dendroica virens
010174		II	Bass, Roanoke	Ambloplites cavifrons
020063		II	Toad, oak	Anaxyrus quercicus

040052		II	Duck, American black	Anas rubripes
040029		II	Heron, little blue	Egretta caerulea caerulea
040105		II	Rail, king	Rallus elegans
040320		II	Warbler, cerulean	Dendroica cerulea
040304		II	Warbler, Swainson's	Limnothlypis swainsonii
040266		II	Wren, winter	Troglodytes troglodytes

To view **All 453 species** View 453

* FE=Federal Endangered; FT=Federal Threatened; SE=State Endangered; ST=State Threatened; FC=Federal Candidate; FS=Federal Species of Concern; CC=Collection Concern

** I=VA Wildlife Action Plan - Tier I - Critical Conservation Need;
II=VA Wildlife Action Plan - Tier II - Very High Conservation Need;
III=VA Wildlife Action Plan - Tier III - High Conservation Need;
IV=VA Wildlife Action Plan - Tier IV - Moderate Conservation Need

Anadromous Fish Use Streams

N/A

Impediments to Fish Passage (1 records)

View Map of All Fish Impediments

ID	Name	River	View Map
195	SLAGLES DAM	THREE CREEK	Yes

Threatened and Endangered Waters (1 Reach)

View Map of All Threatened and Endangered Waters

Stream Name	T&E Waters Species						View Map
	Highest TE*	BOVA Code, Status*, Tier**, Common & Scientific Name					
Three Creek (03010201)	FSST	060173	FSST	II	Pigtoe, Atlantic	Fusconaia masoni	Yes

Managed Trout Streams

N/A

Bald Eagle Concentration Areas and Roosts

N/A

Bald Eagle Nests

N/A

Habitat Predicted for Aquatic WAP Tier I & II Species (4 Reaches)

View Map Combined Reaches from Below of Habitat Predicted for WAP Tier I & II Aquatic Species

Stream Name	Tier Species: Highest TE*	BOVA Code, Status*, Tier**, Common & Scientific Name					View Map
(03010201)	FESE	010214	FESE	I	Logperch, Roanoke	Percina rex	Yes
		060173	FSST	II	Pigtoe, Atlantic	Fusconaia masoni	
Maclins Creek (03010201)	FESE	010214	FESE	I	Logperch, Roanoke	Percina rex	Yes
		060173	FSST	II	Pigtoe, Atlantic	Fusconaia masoni	
Otterdam Swamp (03010201)	FESE	010214	FESE	I	Logperch, Roanoke	Percina rex	Yes
		060173	FSST	II	Pigtoe, Atlantic	Fusconaia masoni	
Three Creek (03010201)	FESE	010214	FESE	I	Logperch, Roanoke	Percina rex	Yes
		060173	FSST	II	Pigtoe, Atlantic	Fusconaia masoni	

Habitat Predicted for Terrestrial WAP Tier I & II Species (2 Species)

View Map of Combined Terrestrial Habitat Predicted for 2 WAP Tier I & II Species Listed Below

ordered by Status Concern for Conservation

BOVA Code	Status*	Tier**	Common Name	Scientific Name	View Map
020044	ST	II	Salamander, Mabee's	Ambystoma mabeei	Yes

020063		II	Toad, oak	Anaxyrus quercicus	Yes

Virginia Breeding Bird Atlas Blocks (3 records)

View Map of All Query Results
Virginia Breeding Bird Atlas Blocks

BBA ID	Atlas Quadrangle Block Name	Breeding Bird Atlas Species			View Map
		Different Species	Highest TE*	Highest Tier**	
50024	Emporia, CE	32		IV	Yes
51035	Jarratt, SW	35		III	Yes
50036	Purdy, SE	62		IV	Yes

Public Holdings:

N/A

Summary of BOVA Species Associated with Cities and Counties of the Commonwealth of Virginia:

FIPS Code	City and County Name	Different Species	Highest TE	Highest Tier
081	Greensville	376	FESE	I
183	Sussex	391	FESE	I
595	Emporia City	308	FESE	I

USGS 7.5' Quadrangles:
Emporia
Purdy
Adams Grove
Jarratt

USGS NRCS Watersheds in Virginia:

N/A

USGS National 6th Order Watersheds Summary of Wildlife Action Plan Tier I, II, III, and IV Species:

HU6 Code	USGS 6th Order Hydrologic Unit	Different Species	Highest TE	Highest Tier

CM20	Meherrin River-Falling Run	65	FCSE	I
CU37	Three Creek-Slagles Lake	61	FESE	I
CU38	Maclins Creek	53	FESE	I
CU39	Three Creek-Otterdam Swamp	70	FESE	I
CU40	Three Creek-Poplar Swamp	71	FESE	I

Compiled on 2/5/2014, 3:33:36 PM V520942.0 report=V searchType= R dist= 4827 poi= 36.7381120 -77.5159358

Natural Heritage Resources

Your Criteria

Taxonomic Group: Select All

Global Conservation Status Rank: Select All

State Conservation Status Rank: Select All

Federal Legal Status: Select All

State Legal Status: Select All

County: Greensville

Physiographic Province: Southern Coastal Plain

Watershed: 03010201 - Nottoway River

Subwatershed: CU39 - Three Creek-Otterdam Swamp

Search Run: 2/5/2014 12:01:34 PM

Click scientific names below to go to NatureServe report.

Click column headings for an explanation of species and community ranks.

Common Name/Natural Community	Scientific Name	Global Conservation Status Rank	State Conservation Status Rank	Federal Legal Status	State Legal Status	Statewide Occurrences
Greensville						
Southern Coastal Plain						
Nottoway						
Maclines Creek						
VASCULAR PLANTS						
Chaffseed	Schwalbea americana	G2G3	SH	LE	None	2
Three Creek-Otterdam Swamp						
AMPHIBIANS						
Barking Treefrog	Hyla gratiosa	G5	S1	None	LT	21

Note: On-line queries provide basic information from DCR's databases at the time of the request. They are NOT to be substituted for a project review or for on-site surveys required for environmental assessments of specific project areas.

For Additional Information on locations of Natural Heritage Resources please submit an information request.

To Contribute information on locations of natural heritage resources, please fill out and submit a rare species sighting form.

The CENTER for CONSERVATION BIOLOGY

About Us | What We Do | Resources | News Room | Give to CCB

HELP / FAQ

MAPPING PORTAL

Layers

Bald Eagle

> Eagle Nests

Most recent data CCB has on bald eagle nest locations in Virginia. Data is largely from two annual aerial flights conducted in winter and spring of all tributaries of the lower Chesapeake Bay and other prominent bodies of water. Reported ground survey data is also included.

More info

Eagle Nests Buffer 330'

Eagle Nests Buffer 660'

Waterbirds

Colonial Waterbirds 2003

Colonial Waterbirds 2008

Chesapeake Bay Herons 2013

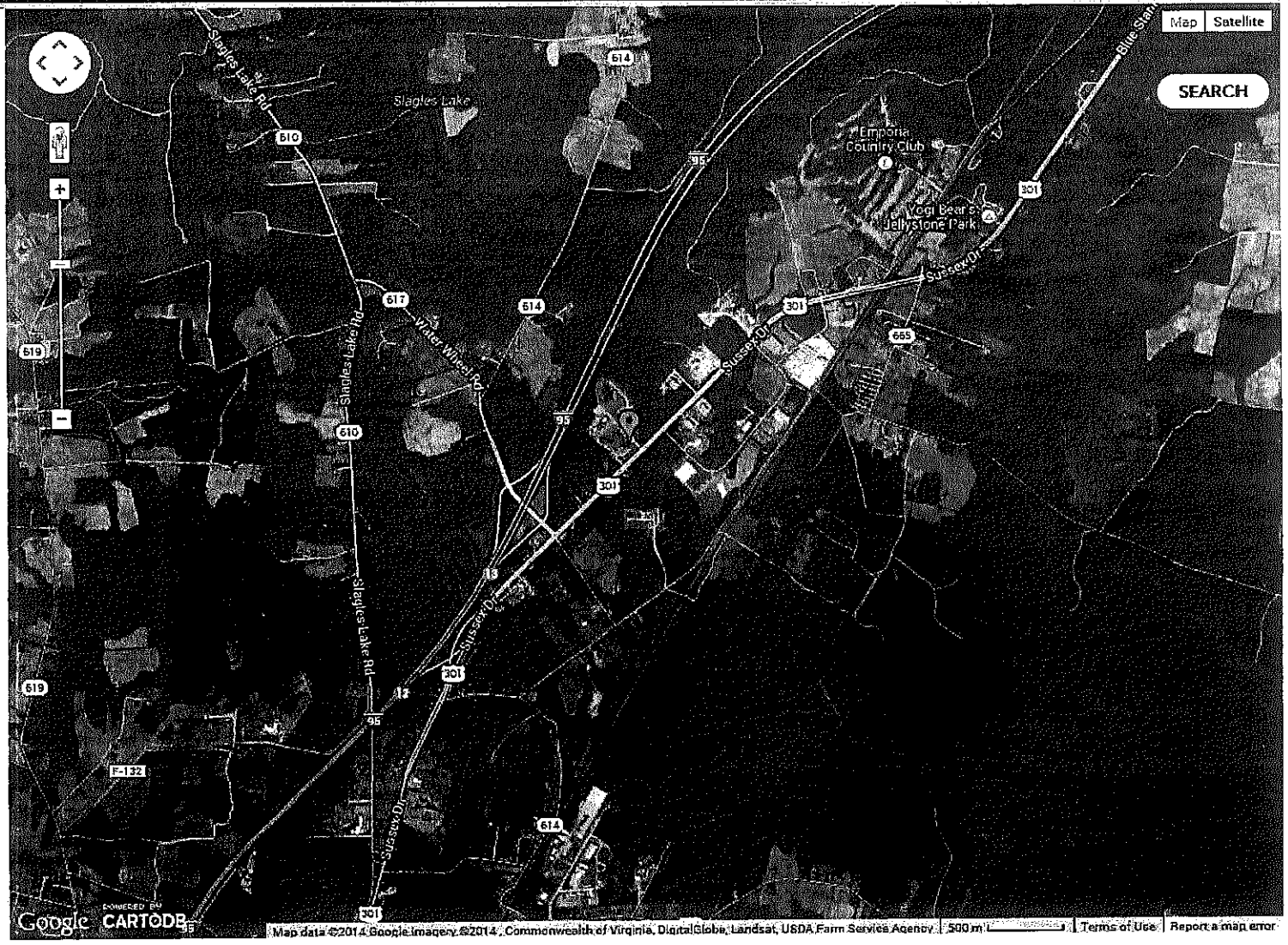
Osprey

Chesapeake Bay Osprey Nests 1995-1996

OspreyWatch Nests

Other Species

Nightjar Survey Network Routes



Species Conclusions Table

Project Name: Greensville County Government Center Master Plan

Date: February 25, 2014

Species / Resource Name	Conclusion	ESA Section 7 / Eagle Act Determination	Notes / Documentation
Dwarf wedgemussel *(Alasmidonta heterodon)*	No suitable habitat present	No effect	Species not present in VDGIF FWIS search. Both streams within the Action Area (north and south side of existing government complex) are property boundaries and will not be impacted by the proposed development. On-site wetlands that may be impacted are not suitable habitat.
Roanoke logperch *(Percina rex)*	No suitable habitat present	No effect	VDGIF FWIS occurrence chapter indicates 1 'known' general occurrence and 1 'known' resident occurrence in Greensville Co. The 6th order Hydrologic Unit Distribution map (attached) indicates a known or likely occurrence in the Three Creek-Otterdam Swamp subwatershed. Two streams are located within the action area: Uriah Branch to the north and unnamed stream to the south; neither will be impacted by the proposed development. Service's Species Fact Sheet (attached), life history section indicates that the logperch typically inhabits medium-to-large, warm, usually clear streams and small rivers of moderate to low gradient. Adults usually inhabit the main body of stream pools, runs, and riffles and select areas with exposed, silt free gravel substrate. On-site wetlands that may be impacted are not suitable habitat.
Alewife *(Alosa pseudoharengus)*	No suitable habitat present	No effect	VDGIF FWIS occurrence chapter indicates no occurrence in Greensville Co. and 6th order Hydrologic Unit occurrence indicates known or likely within unit (attached). Two streams are located within the action area: Uriah Branch to the north and unnamed stream to the south; neither will be impacted by the proposed development.

			On-site wetlands that may be impacted are not suitable habitat.
Red-cockaded Woodpecker *(Picoides borealis)*	No suitable habitat present	No effect	VDGIF FWIS occurrence chapter indicates 2 'likely' general occurrence in Greensville Co. and no 6th order Hydrologic Unit occurrence (attached). Site overstory is comprised of mature mixed hardwoods, with scattered loblolly pine *(Pinus taeda)*. Existing forestland is fragmented; the existing Government Center is bound to the west by I-95, to the east by US 301, and to the north and south by streams and residences; not suitable for potential nesting RCW's.
American chaffseed *(Schwalbea americana)*	No suitable habitat present	No effect	NatureServe Explorer comprehensive report (attached) indicates species currently not found north of the Carolinas except in New Jersey. The site contains existing development, exhibits past disturbance and the surrounding property is fire suppressed, all supporting no evidence of suitable habitat.
Barking Treefrog (*Hyla gratiosa*)	No suitable habitat present	No effect	NatureServe Explorer comprehensive report (attached) classifies habitat as sandy areas in pine savannas and in low wet woods and swamps (e.g., willow oak-blackgum, cypress swamps). When inactive during cold or dry season, burrows under tree roots, vegetation, or in soil; otherwise mostly arboreal and thus dependent on trees near water. Eggs and larvae develop in shallow water of ponds, swamps, and bayheads; in Virginia, breeding sites were temporary ponds dominated by graminoids, beneath open canopies (Mitchell 1991). Reproduction is more successful in semi-permanent ponds due to the absence of predatory fishes. In some areas, deep ponds, such as Carolina Bays and barrow pits, are preferred breeding sites. Existing forestland is fragmented; the existing Government Center is bound to the west by I-95, to the east by US 301, and to the north and south by streams and residences; On-site wetlands are topographically driven wet weather systems, draining into the unnamed creek to the south. Vernal pools,

			shallow ponds, etc. are not present; therefore, suitable breeding habitat is not present.
Critical habitat	No critical habitat present	No effect	
Bald eagle (*Haliaeetus leucocephalus*)	Unlikely to disturb nesting bald eagles	No Eagle Act permit required	No nests within 660'
Bald eagle (*Haliaeetus leucocephalus*)	Does not intersect with bald eagle concentration area	No Eagle Act permit required	Not within a concentration area

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ecological Services
6669 Short Lane
Gloucester, Virginia 23061

Date: February 25, 2014

Online Project Review Certification Letter

Project Name: Greensville County Government Center Master Plan

Dear Applicant:

Thank you for using the U.S. Fish and Wildlife Service (Service) Virginia Field Office online project review process. By printing this letter in conjunction with your project review package, you are certifying that you have completed the online project review process for the referenced project in accordance with all instructions provided, using the best available information to reach your conclusions. This letter, and the enclosed project review package, completes the review of your project in accordance with the Endangered Species Act of 1973 (16 U.S.C. 1531-1544, 87 Stat. 884), as amended (ESA), and the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c, 54 Stat. 250), as amended (Eagle Act). This letter also provides information for your project review under the National Environmental Policy Act of 1969 (P.L. 91-190, 42 U.S.C. 4321-4347, 83 Stat. 852), as amended. A copy of this letter and the project review package must be submitted to this office for this certification to be valid. This letter and the project review package will be maintained in our records.

The species conclusions table in the enclosed project review package summarizes your ESA and Eagle Act conclusions. These conclusions resulted in "no effect" and/or "not likely to adversely affect" determinations for listed species and critical habitat and/or "no Eagle Act permit required" determinations for eagles regarding potential effects of your proposed project. We certify that the use of the online project review process in strict accordance with the instructions provided as documented in the enclosed project review package results in reaching the appropriate determinations. Therefore, we concur with the "no effect" and "not likely to adversely affect" determinations for listed species and critical habitat and "no Eagle Act permit required" determinations for eagles. Additional coordination with this office is not needed.

Candidate species are not legally protected pursuant to the ESA. However, the Service encourages consideration of these species by avoiding adverse impacts to them. Please contact this office for additional coordination if your project action area contains candidate species.

Should project plans change or if additional information on the distribution of listed species, critical habitat, or bald eagles becomes available, this determination may be reconsidered. This certification letter is valid for one year.

Information about the online project review process including instructions and use, species information, and other information regarding project reviews within Virginia is available at our website http://www.fws.gov/northeast/virginiafield/endspecies/project_reviews.html. If you have any questions, please contact Kimberly Smith of this office at (804) 693-6694, extension 124.

Sincerely,

/s/ Cynthia A. Schulz

Cindy Schulz
Supervisor
Virginia Field Office

Enclosures - project review package

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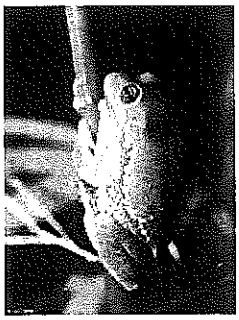
NatureServe EXPLORER

An Online Encyclopedia of Life

Hyla gratiosa - LeConte, 1856
Barking Treefrog
Taxonomic Status: Accepted
Related ITIS Name(s): *Hyla gratiosa* LeConte, 1856 (TSN 173508)
Spanish Common Names:
Unique Identifier: ELEMENT_GLOBAL.2.106453
Element Code: AAABC02100
Informal Taxonomy: Animals, Vertebrates - Amphibians - Frogs and Toads



View image report from CalPhoto

Kingdom	Phylum	Class	Order	Family	Genus
Animalia	Craniata	Amphibia	Anura	Hylidae	Hyla

Genus Size: D - Medium to large genus (21+ species)

Check this box to expand all report sections: ☑

Concept Reference

Concept Reference: Frost, D. R. 1985. Amphibian species of the world. A taxonomic and geographical reference. Allen Press, Inc., and The Association of Systematics Collections, Lawrence, Kansas. v + 732 pp.
Concept Reference Code: B85FRO01HQUS
Name Used in Concept Reference: *Hyla gratiosa*

Conservation Status

NatureServe Status

Global Status: G5
Global Status Last Reviewed: 01Apr2002
Global Status Last Changed: 26Oct2001
Rounded Global Status: G5 - Secure
Nation: United States
National Status: N5 (05Nov1996)

U.S. & Canada State/Province Status

United States	Alabama (S5), Delaware (S1), Florida (SNR), Georgia (S5), Kentucky (S3), Louisiana (S3S4), Maryland (S1), Mississippi (S4S5), New Jersey (SNA), North Carolina (S4), South Carolina (SNR), Tennessee (S3), Virginia (S1)

Other Statuses

IUCN Red List Category: LC - Least concern

NatureServe Global Conservation Status Factors

Range Extent: 200,000-2,500,000 square km (about 80,000-1,000,000 square miles)
Range Extent Comments: Coastal Plain and some upland areas from North Carolina to southern Florida, west to Louisiana, including northern Mississippi (Keiser, 1992, Herpetol. Rev. 23:86); disjunct populations occur in Delaware and adjacent Maryland, southwestern Kentucky and adjacent Tennessee, and in southeastern Virginia; introduced and probably now extirpated in southern New Jersey (Conant and Collins 1991).

Number of Occurrences:
Number of Occurrences Comments: Represented by many and/or large occurrences throughout most of the range.

Population Size: 10,000 - 1,000,000 individuals
Population Size Comments: Total adult population size is unknown but likely exceeds 10,000.

Environmental Specificity: Moderate to broad.

Overall Threat Impact: Medium
Overall Threat Impact Comments: In some areas (e.g., Virginia) threatened by the conversion of native pine habitat to high density monocultures of loblolly pine (Mitchell 1991). In Florida, habitat alteration and collecting for the pet trade are threats of unknown magnitude (Bartlett and Bartlett 1999).

Intrinsic Vulnerability: Moderately vulnerable

Short-term Trend: Relatively stable to decline of 30%
Short-term Trend Comments: Overall trend is unknown but likely relatively stable to slightly declining. In Florida, remains common in some areas, but has declined where habitat has been altered and where heavily collected for the pet trade (Bartlett and Bartlett 1999). May be naturally cyclic in abundance (Bartlett and Bartlett 1999).

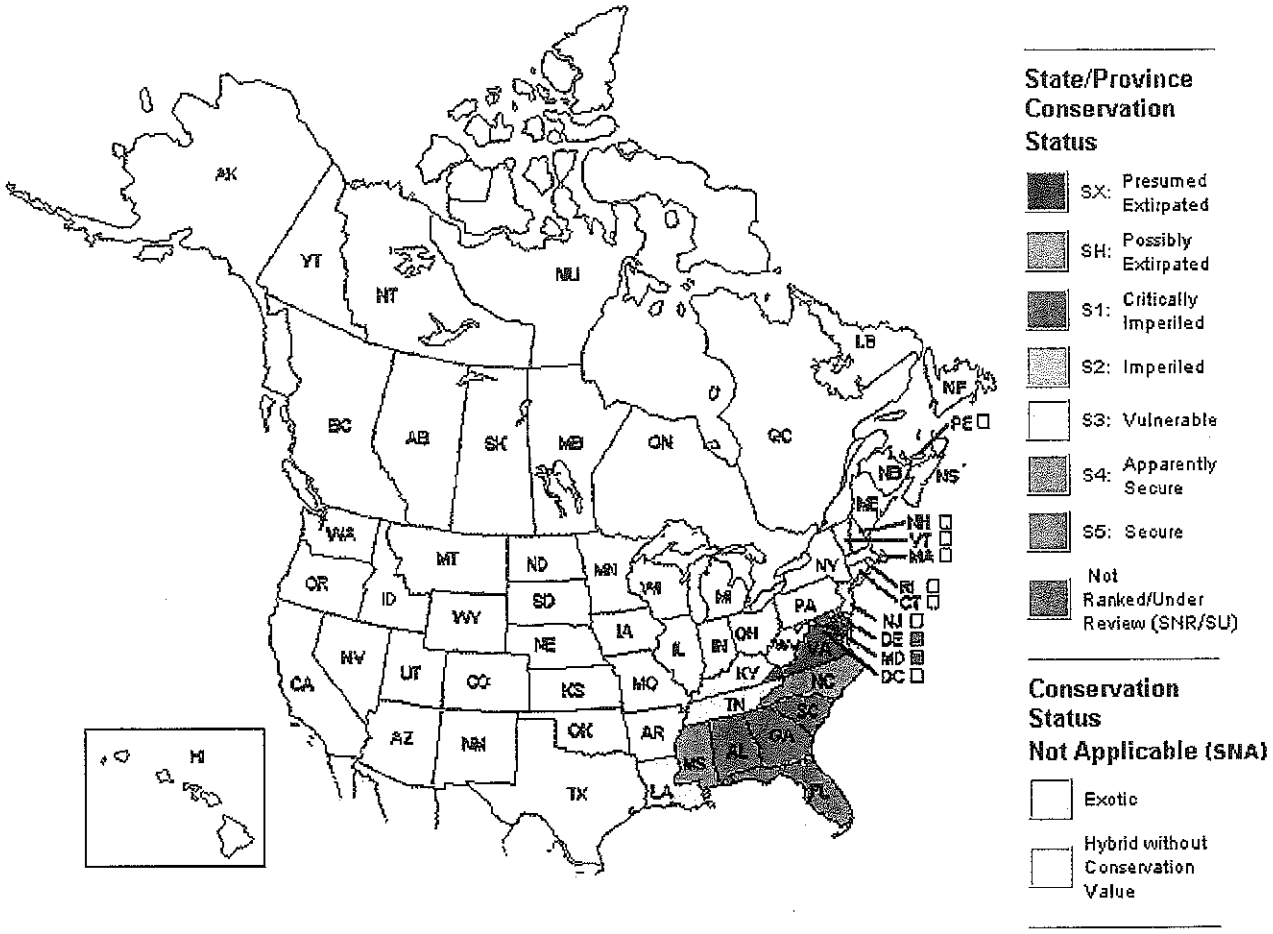
Long-term Trend:
Long-term Trend Comments: Likely relatively stable in extent of occurrence, unknown degree of decline in population size, area of occurrence, and number/condition of occurrences.

Other NatureServe Conservation Status Information

Distribution

Global Range: (200,000-2,500,000 square km (about 80,000-1,000,000 square miles)) Coastal Plain and some upland areas from North Carolina to southern Florida, west to Louisiana, including northern Mississippi (Keiser, 1992, Herpetol. Rev. 23:86); disjunct populations occur in Delaware and adjacent Maryland, southwestern Kentucky and adjacent Tennessee, and in southeastern Virginia; introduced and probably now extirpated in southern New Jersey (Conant and Collins 1991).

U.S. States and Canadian Provinces

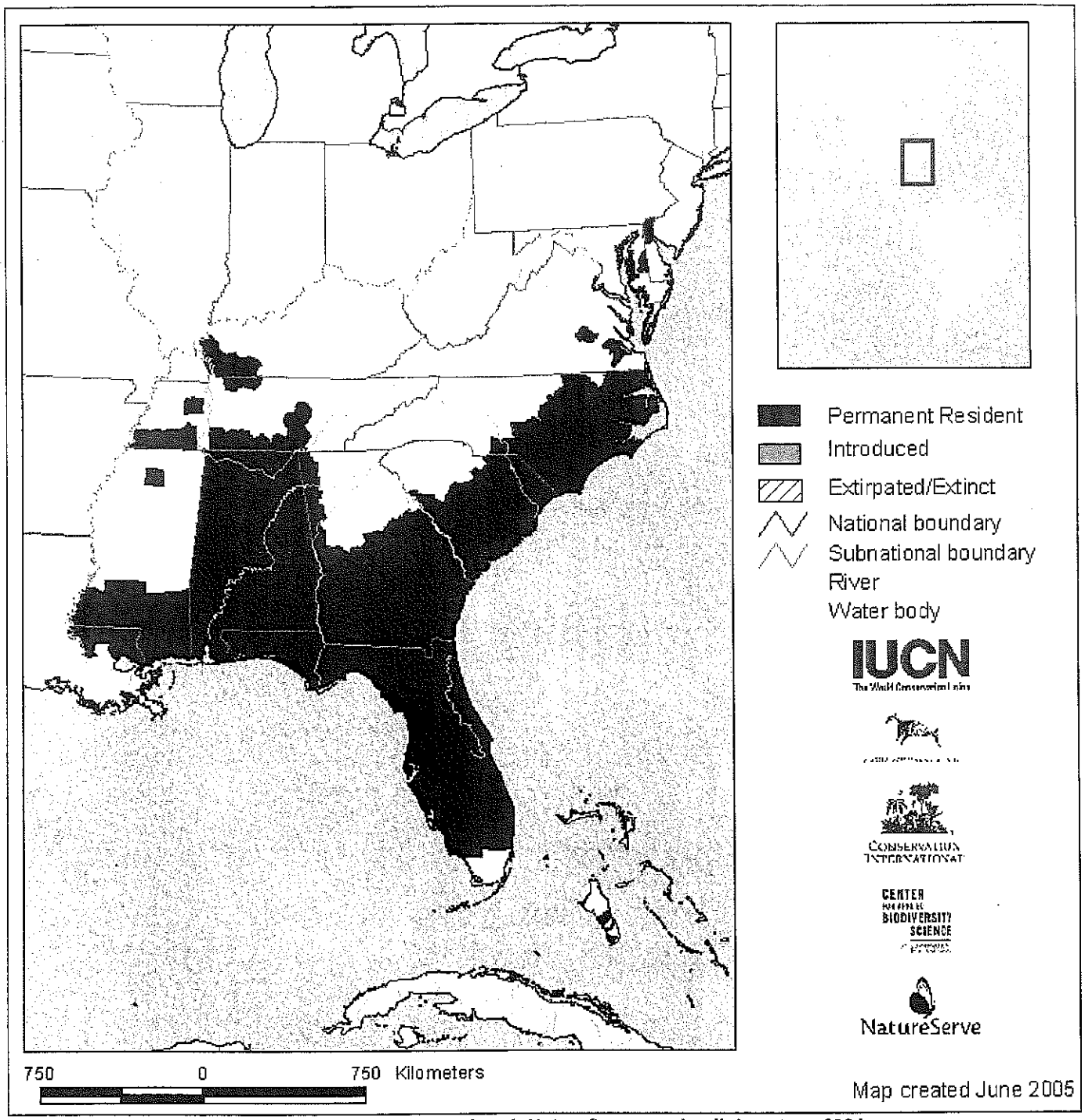


Endemism: endemic to a single nation

U.S. & Canada State/Province Distribution	
United States	AL, DE, FL, GA, KY, LA, MD, MS, NC, NJ , SC, TN, VA

Range Map

Note: Range depicted for New World only. The scale of the maps may cause narrow coastal ranges or ranges on small islands not to appear. Not all vagrant or small disjunct occurrences are depicted. For migratory birds, some individuals occur outside of the passage migrant range depicted. A shapefile of this map is available for download at www.natureserve.org/getData/animalData.jsp.



Range Map Compilers: IUCN, Conservation International, NatureServe, and collaborators, 2004

U.S. Distribution by County ?	
State	**County Name (FIPS Code)**
DE	New Castle (10003), Sussex (10005)
KY	Caldwell (21033), Christian (21047), Crittenden (21055), Livingston (21139), Logan (21141), Lyon (21143), Todd (21219), Trigg (21221)
MD	Caroline (24011), Kent (24029), Queen Annes (24035)
TN	Carroll (47017), Chester (47023), Coffee (47031), Decatur (47039), Dyer (47045), Fayette (47047), Franklin (47051), Hardeman (47069), Hardin (47071), Marion (47115), McNairy (47109), Montgomery (47125), Robertson (47147), Shelby (47157), Van Buren (47175), Warren (47177), White (47185)
VA	Chesterfield (51041)*, Greensville (51081), Isle of Wight (51093), Mathews (51115)*, Prince George (51149), Southampton (51175), Surry (51181), Sussex (51183)*, Virginia Beach (City) (51810), York (51199)

* Extirpated/possibly extirpated

U.S. Distribution by Watershed	
Watershed Region	Watershed Name (Watershed Code)
02	Chincoteague (02040303)+, Chester-Sassafras (02060002)+, Choptank (02060005)+, Great Wicomico-Piankatank (02080102)+*, Lynnhaven-Poquoson (02080108)+, Lower James (02080206)+, Appomattox (02080207)+*
03	Nottoway (03010201)+, Blackwater (03010202)+
05	Collins (05130107)+, Caney (05130108)+, Lower Cumberland (05130205)+, Red (05130206)+
06	Guntersville Lake (06030001)+, Upper Elk (06030003)+, Lower Tennessee-Beech (06040001)+
08	Obion (08010202)+, South Fork Obion (08010203)+, South Fork Forked Deer (08010205)+, Lower Hatchie (08010208)+, Loosahatchie (08010209)+, Wolf (08010210)+

+ Natural heritage record(s) exist for this watershed
* Extirpated/possibly extirpated

Ecology & Life History

Basic Description: A treefrog.
Reproduction Comments: Lays clutch of up to about 2000 eggs after heavy rains in spring or summer. Multiple clutches have been documented in Georgia (Perrill and Daniel 1983). Eggs hatch in several days. Aquatic larvae metamorphose into terrestrial form in about 1-2 months. Breeding aggregations generally do not exceed 20-25 males.
Non-Migrant: N
Locally Migrant: Y
Long Distance Migrant: N
Mobility and Migration Comments: Migrates between breeding ponds and adjacent nonbreeding terrestrial habitats.
Lacustrine Habitat(s): Shallow water
Palustrine Habitat(s): FORESTED WETLAND, Riparian, SCRUB-SHRUB WETLAND, TEMPORARY POOL
Terrestrial Habitat(s): Forest - Conifer, Forest - Hardwood, Forest - Mixed, Savanna, Woodland - Conifer, Woodland - Hardwood, Woodland - Mixed
Special Habitat Factors: Benthic, Burrowing in or using soil, Fallen log/debris, Standing snag/hollow tree
Habitat Comments: Sandy areas in pine savannas and in low wet woods and swamps (e.g., willow oak-blackgum, cypress swamps). When inactive during cold or dry season, burrows under tree roots, vegetation, or in soil; otherwise mostly arboreal and thus dependent on trees near water. Eggs and larvae develop in shallow water of ponds, swamps, and bayheads; in Virginia, breeding sites were temporary ponds dominated by graminoids, beneath open canopies (Mitchell 1991). Reproduction is more successful in semi-permanent ponds due to the absence of predatory fishes. In some areas, deep ponds, such as Carolina Bays and barrow pits, are preferred breeding sites.
Adult Food Habits: Invertivore
Immature Food Habits: Herbivore
Food Comments: Metamorphosed frogs eat various small arthropods obtained in trees and other vegetation and on the ground. Larvae eat organic debris, algae, and plant tissue.
Adult Phenology: Hibernates/aestivates, Nocturnal
Immature Phenology: Hibernates/aestivates, Nocturnal
Phenology Comments: Inactive during hot dry weather and during cold winter period.
Colonial Breeder: Y
Length: 7 centimeters

Economic Attributes

Not yet assessed

Management Summary

Monitoring Requirements: See Murphy (1993, Herpetol. Rev. 24:143-145) for information on a capture method using a modified drift fence.

Population/Occurrence Delineation

Group Name: Hylid Frogs (Treefrogs)

Use Class: Not applicable
Minimum Criteria for an Occurrence: Occurrences are based on evidence of historical presence, or current and likely recurring presence, at a given location. Such evidence minimally includes collection or reliable observation and documentation of one or more individuals (including larvae or eggs) in or near appropriate habitat where the species is presumed to be established and breeding.
Separation Barriers: Busy major highway such that frogs rarely if ever cross successfully; intensive urban development dominated by buildings and pavement and lacking suitable vegetated frog refuges.
Separation Distance for Unsuitable Habitat: 1 km
Separation Distance for Suitable Habitat: 5 km
Separation Justification: Available information is limited but indicates that hylids generally exhibit limited movements on a short-term basis. In New Jersey, Freda and Morin (1984) and Freda and Gonzalez (1986) demonstrated that individual Hyla andersonii often travel distances of 100 m from breeding ponds during the nonbreeding season. In montane Colorado, Spencer (1964) found that Pseudacris triseriata range into wet meadows usually within about 700 m of their breeding sites and sometimes cross a few hundred meters of upland habitat. Kay (1989) determined that most Pseudacris cadaverina individuals range over small segments of streamcourse; 83 percent of movements were less than 25 m in a 1-year study. In Michigan, nonbreeding home range diameters of Pseudacris crucifer, established around forest debris and vegetation, ranged from 1.2 to 5.5 m (Delzell 1958).

Based on this information it appears that 1 km is an appropriate separation distance for unsuitable habitat. Despite limited data suggesting restricted movements, dispersal data are scant, and these frogs are clearly physically capable of long moves. It seems unlikely that occupied locations separated by a gap of less than several kilometers of suitable habitat would represent independent occurrences over the long term.
Inferred Minimum Extent of Habitat Use (when actual extent is unknown): .5 km
Inferred Minimum Extent Justification: Inferred extent distance pertains to distance from breeding sites.
Date: 21Sep2004
Author: Hammerson, G.

Population/Occurrence Viability

Justification: Use the Generic Guidelines for the Application of Occurrence Ranks (2008).
The Key for Ranking Species Occurrences Using the Generic Approach provides a step-wise process for implementing this method.
Key for Ranking Species Element Occurrences Using the Generic Approach (2008).

U.S. Invasive Species Impact Rank (I-Rank) **Not yet assessed**

Authors/Contributors

NatureServe Conservation Status Factors Edition Date: 01Apr2002
NatureServe Conservation Status Factors Author: Hammerson, G.
Element Ecology & Life History Edition Date: 03Feb1994
Element Ecology & Life History Author(s): Hammerson, G.

Zoological data developed by NatureServe and its network of natural heritage programs (see Local Programs) and other contributors and cooperators (see Sources).

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Note: All species and ecological community data presented in NatureServe Explorer at http://explorer.natureserve.org were updated to be current with NatureServe's central databases as of **July 2013.**
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Citation for data on website including State Distribution, Watershed, and Reptile Range maps:
NatureServe. 2014. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Available http://explorer.natureserve.org. (Accessed: February 25, 2014).

Citation for Bird Range Maps of North America:
Ridgely, R.S., T.F. Allnutt, T. Brooks, D.K. McNicol, D.W. Mehlman, B.E. Young, and J.R. Zook. 2003. Digital Distribution Maps of the Birds of the Western Hemisphere, version 1.0. NatureServe, Arlington, Virginia, USA.

Acknowledgement Statement for Bird Range Maps of North America:
"Data provided by NatureServe in collaboration with Robert Ridgely, James Zook, The Nature Conservancy - Migratory Bird Program, Conservation International - CABS, World Wildlife Fund - US, and Environment Canada - WILDSPACE."

Citation for Mammal Range Maps of North America:
Patterson, B.D., G. Ceballos, W. Sechrest, M.F. Tognelli, T. Brooks, L. Luna, P. Ortega, I. Salazar,

and B.E. Young. 2003. Digital Distribution Maps of the Mammals of the Western Hemisphere, version 1.0. NatureServe, Arlington, Virginia, USA.

Acknowledgement Statement for Mammal Range Maps of North America:
"Data provided by NatureServe in collaboration with Bruce Patterson, Wes Sechrest, Marcelo Tognelli, Gerardo Ceballos, The Nature Conservancy-Migratory Bird Program, Conservation International-CABS, World Wildlife Fund-US, and Environment Canada-WILDSPACE."

Citation for Amphibian Range Maps of the Western Hemisphere:
IUCN, Conservation International, and NatureServe. 2004. Global Amphibian Assessment. IUCN, Conservation International, and NatureServe, Washington, DC and Arlington, Virginia, USA.

Acknowledgement Statement for Amphibian Range Maps of the Western Hemisphere:
"Data developed as part of the Global Amphibian Assessment and provided by IUCN-World Conservation Union, Conservation International and NatureServe."

NOTE: Full metadata for the Bird Range Maps of North America is available at:
http://www.natureserve.org/library/birdDistributionmapsmetadatav1.pdf.

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Version 7.1 (2 February 2009)
Data last updated: July 2013

NatureServe EXPLORER

An Online Encyclopedia of Life

Schwalbea americana - L.

Chaffseed

Other Common Names: chaffseed
Taxonomic Status: Accepted
Related ITIS Name(s): *Schwalbea americana* L. (TSN 34027)
Unique Identifier: ELEMENT_GLOBAL.2.144235
Element Code: PDSCR1Q010
Informal Taxonomy: Plants, Vascular - Flowering Plants - Figwort Family

Kingdom	Phylum	Class	Order	Family	Genus
Plantae	Anthophyta	Dicotyledoneae	Scrophulariales	Scrophulariaceae	Schwalbea

Check this box to expand all report sections: ☑

Concept Reference

Concept Reference: Kartesz, J.T. 1994. A synonymized checklist of the vascular flora of the United States, Canada, and Greenland. 2nd edition. 2 vols. Timber Press, Portland, OR.
Concept Reference Code: B94KAR01HQUS
Name Used in Concept Reference: *Schwalbea americana*
Taxonomic Comments: Distinct species, in monotypic genus. *Schwalbea australis* was formerly regarded as a separate species but is now included here (Kartesz 1994, 1999).

Conservation Status

NatureServe Status

Global Status: G2G3
Global Status Last Reviewed: 07Dec2007
Global Status Last Changed: 07Dec2007
Rounded Global Status: G2 - Imperiled
Reasons: Formerly found throughout much of the Atlantic and Gulf coastal plains from New England to Florida and west to eastern Texas, as well as in a few inland places. Now extirpated throughout much of this historical range. Extant sites often have few individuals, and the species is apparently declining in abundance at many sites. Much of this species' former habitat has long-since been converted to farmland. Housing development, road building, over-collection, and succession of its open habitat to woody vegetation (due to fire suppression) are significant documented threats.
Nation: United States
National Status: N2N3

U.S. & Canada State/Province Status	
United States	Alabama (S1), Connecticut (SH), Delaware (SX), Florida (S1), Georgia (S1), Kentucky (SH), Louisiana (S1), Maryland (SX), Massachusetts (SH), Mississippi (SH), New Jersey (S1), New York (SX), North Carolina (S2), South Carolina (S3), Tennessee (SX), Virginia (SH)

Other Statuses

U.S. Endangered Species Act (USESA): LE: Listed endangered (29Sep1992)
U.S. Fish & Wildlife Service Lead Region: R5 - Northeast

NatureServe Global Conservation Status Factors

Range Extent Comments: Historically known from Massachusetts and New York south along the East Coast to Florida and west along the Gulf Coast states to Texas. Currently not found north of the Carolinas except in New Jersey. Historic or extirpated in several southern states as well.

Number of Occurrences: 81 - 300

Population Size Comments: Several Element Occurrences have about 100+ plants; Fort Bragg has about 6,000 plants; one occurrence in South Carolina has 2,000+.

Number of Occurrences with Good Viability/Integrity: Few to some (4-40) occurrences with good viability

Overall Threat Impact: Very high - high
Overall Threat Impact Comments: Fire suppression allows succession to proceed to where competition for light excludes this species (Rawinski and Cassin 1986). Housing development and road building have led to the recent extirpation of one of only two occurrences in New Jersey and were surely factors in the demise of some of the fifteen other historic occurrences. The single surviving New Jersey population occurs on state forest land within the Pinelands National Reserve but is nevertheless "extremely vulnerable" to road improvements (Snyder 1988). South Carolina occurrences are also threatened by development; one occurs among natural grasses of a poorly maintained ball field. Expansion of the field or "better" maintenance would threaten the species. This occurrence of 347 plants is the largest among those of the Francis Marion National Forest, which supports a total of 808 plants (Rayner 1986). Elsewhere in South Carolina intensive pine forest management and/or drainage of wetlands so as to disrupt the fluctuating wet to dry conditions which favor the species would threaten some occurrences (Kral 1983). In Florida, one population in Leon County was recently extirpated by residential development (Peters 1992). In Massachusetts, the Nantucket population, known since 1870, was last seen in 1963, an apparent victim of fire suppression and scrub oak succession. However, in Myles Standish State Forest in Plymouth and at the Montague Sandplain, no plants have been documented since the 1870s, despite a record of frequent burns in those pitch pine-scrub oak communities (Sorrie 1987).

Intrinsic Vulnerability Comments: Fairly resistant.

Short-term Trend: Decline of 10-30%
Short-term Trend Comments: Appears to be a rapid decline in the number of individuals.

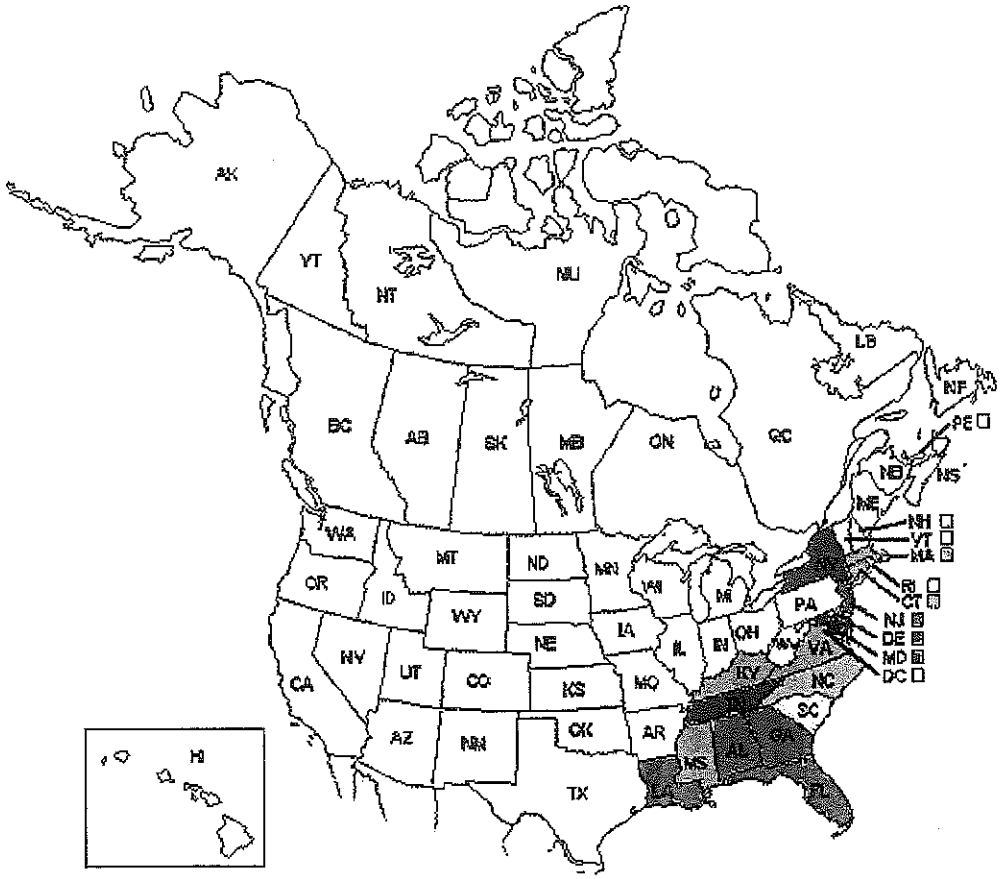
Long-term Trend: Decline of 50-90%

Other NatureServe Conservation Status Information

Distribution

Global Range: Historically known from Massachusetts and New York south along the East Coast to Florida and west along the Gulf Coast states to Texas. Currently not found north of the Carolinas except in New Jersey. Historic or extirpated in several southern states as well.

U.S. States and Canadian Provinces



State/Province Conservation Status

- SX: Presumed Extirpated
- SH: Possibly Extirpated
- S1: Critically Imperiled
- S2: Imperiled
- S3: Vulnerable
- S4: Apparently Secure
- S5: Secure
- Not Ranked/Under Review (SNR/SU)

Conservation Status Not Applicable (SNA)

- Exotic
- Hybrid without Conservation Value

U.S. & Canada State/Province Distribution	
United States	AL, CT, DE►, FL, GA, KY, LA, MA, MD►, MS, NC, NJ, NY►, SC, TN►, VA

Range Map

No map available.

U.S. Distribution by County ?	
State	**County Name (FIPS Code)**
AL	Baldwin (01003), Geneva (01061)*, Mobile (01097)*
CT	New London (09011)*
FL	Gadsden (12039)*, Leon (12073), Putnam (12107)*
GA	Baker (13007), Colquitt (13071), Dougherty (13095), Early (13099)*, Miller (13201)*, Mitchell (13205), Pike (13231)*, Seminole (13253)*, Thomas (13275), Upson (13293)*, Worth (13321)
KY	McCreary (21147)*, Wayne (21231)*
LA	Allen (22003), Beauregard (22011)
MA	Barnstable (25001)*, Bristol (25005)*, Dukes (25007)*, Franklin (25011)*, Nantucket (25019)*, Norfolk (25021)*, Plymouth (25023)*, Worcester (25027)*
MD	Anne Arundel (24003)*, Prince Georges (24033)*, Worcester (24047)*
MS	Covington (28031)*, Jackson (28059)*, Jefferson Davis (28065)*, Simpson (28127)*, Smith (28129)*
NC	Bladen (37017)*, Cumberland (37051), Hoke (37093), Moore (37125)*, Pender (37141)*, Scotland (37165)
NJ	Atlantic (34001)*, Burlington (34005), Camden (34007)*, Cape May (34009)*, Cumberland (34011)*, Gloucester (34015)*, Monmouth (34025)*, Ocean (34029)*

NY	Albany (36001)*
TN	Coffee (47031)*, Franklin (47051)*, Moore (47127)*
VA	Emporia (City) (51595)*, Greensville (51081)*, Sussex (51183)*

* Extirpated/possibly extirpated

U.S. Distribution by Watershed	
Watershed Region	Watershed Name (Watershed Code)
01	Charles (01090001)+*, Cape Cod (01090002)+*, Thames (01100003)+*
02	Mohawk (02020004)+*, Middle Hudson (02020006)+*, Crosswicks-Neshaminy (02040201)+*, Lower Delaware (02040202)+, Delaware Bay (02040204)+*, Cohansey-Maurice (02040206)+*, Mullica-Toms (02040301)+*, Great Egg Harbor (02040302)+*, Chincoteague (02040303)+*, Severn (02060004)+*, Patuxent (02060006)+*
03	Nottoway (03010201)+*, Meherrin (03010204)+*, Upper Cape Fear (03030004)+, Lower Cape Fear (03030005)+*, Black (03030006)+*, Northeast Cape Fear (03030007)+*, Lumber (03040203)+*, Little Pee Dee (03040204)+, Waccamaw (03040206)+*, Upper St. Johns (03080101)+*, Little (03110204)+, Apalachee Bay-St. Marks (03120001)+, Upper Ochlockonee (03120002)+, Lower Ochlockonee (03120003)+, Lower Chattahoochee (03130004)+*, Upper Flint (03130005)+*, Lower Flint (03130008)+, Ichawaynochaway (03130009)+, Spring (03130010)+*, Apalachicola (03130011)+*, Perdido (03140106)+, Upper Choctawhatchee (03140201)+*, Pea (03140202)+*, Mobile - Tensaw (03160204)+*, Mobile Bay (03160205)+*, Upper Leaf (03170004)+*, Escatawpa (03170008)+*, Middle Pearl-Strong (03180002)+*, Middle Pearl-Silver (03180003)+*
05	Upper Cumberland (05130101)+*, Upper Cumberland-Lake Cumberland (05130103)+*, South Fork Cumberland (05130104)+*
06	Upper Elk (06030003)+*, Upper Duck (06040002)+*
08	Upper Calcasieu (08080203)+
CC	CC-40 (CC-40)+*

+ Natural heritage record(s) exist for this watershed
* Extirpated/possibly extirpated

Ecology & Life History

Basic Description: A perennial herb with mostly unbranched stems, usually 3-6 dm tall. Leaves are largest at the base of the plant and gradually diminish in size towards the top of the stem. The 2-lipped flowers are yellow, suffused with purple. This species is parasitic on the roots of a wide variety of woody and herbaceous plants. It is in bloom from April through June in the South and from June to late July in the North.

General Description: An erect perennial with unbranched stems or branched only at base, growing to 3-6 dm (to 8 dm, Musselman and Mann 1978), with solitary, two-lipped, yellow and purplish or reddish flowers. Leaves are largest at the base of the plant and gradually diminish in size towards the top of the stem. The 2-lipped flowers are yellow, suffused with purple. This species is parasitic on the roots of a wide variety of woody and herbaceous plants.

This species produces showy, insect-pollinated flowers; the high degree of zygomorphy elaborated for pollination by bees (Pennell 1935).

Technical Description: Stems: Unbranched or branched (up to a dozen, rarely more) only from the base, 3-6(8) dm, villous on upper stem, puberulent with ascending hairs on lower stem (Small 1933), entire plant "copiously covered by soft hairs," these glandular on cotyledons and first leaves, becoming simple on mature plant from loss of glandular heads; internodes terete, yellow-green, tinged with red or purple upwards.

Leaves alternate, all cauline, sessile, the lower sometimes spreading, but mostly all ascending or erect, overlapping in tight spiral, the smallest scale-like at stem base, the largest in the lower third of the stem (Kral 1983), leaves gradually smaller and narrower upwards, becoming bracteal leaves in inflorescence; blades entire, 2-4 cm (1-5 cm, Vincent 1982) long, elliptic-oval to lanceolate, rarely oblanceolate, acute or obscurely reticulate, slightly revolute (Kral 1983), the base cuneate; surface yellow-green or deep dull green with red undertones, both sides pale; villous-puberulent or strigillose (Small 1933); blade three-veined with veining impressed above, the

midvein slightly raised beneath.

Inflorescence with flowers solitary in the uppermost axils ascending on short pedicels, forming a leafy, spike-like raceme (Gleason and Cronquist 1991); each pedicel 2.0-2.5 mm long (3-5 mm long according to Small 1933), villosulous, subtended by two linear bractlets 5-15 mm long, shorter than the calyx.

Flowers: Calyx 15-22 mm long, forming an irregular tube with five unequal lobes, each shorter than the tube, the tube strongly 10 to 12-nerved; calyx lobes acute or acuminate, the upper one short and narrow, 7-10 mm long (Small 1933), the lower pair well-united and broad, 20-22 mm long (Small 1933); corolla strongly two-lipped, about 30 mm long (about 15 mm long according to Musselman and Mann 1978) and 7 mm wide; lips about as long as the tube, yellow and distally purplish or reddish (rose-brown), the upper lip nearly straight, oblong, concave, entire or shallowly two-lobed (Kral 1983), the lower lip short, decurved, shallowly three-lobed, the throat with two slightly pubescent ridges, with folds extending inward from the sinuses (Gleason and Cronquist 1991); stamens 4, epipetalous, included and ascending in the upper lip, one pair shorter, the filaments slender, smooth, longer than the oblong, dorsifixed, nearly glabrous yellow anthers (Kral 1983); ovary superior, erect, bicarpellate, the slender glabrous style, 2-3 cm long, curved up and arching within the upper corolla lip in line with the filaments; the narrow capitate stigma protrudes slightly beyond.

Fruit a stout capsule, narrowly ellipsoid to oblong-cylindrical, glabrous, brown, 10-12 mm long at maturity, with septicidal dehiscence "its narrowed apex developing an annulix around and including within the persistent style base" (Kral 1983), a persistent calyx with 12 strongly projecting ribs (Gleason and Cronquist 1991).

Seeds numerous per fruit, pale greenish brown or yellowish tan, narrowly linear, somewhat flattened or compressed, slightly curved (Small 1933), hence the name chaffseed, about 2.5-3.0 mm (to 6.0 mm according to Musselman and Mann 1978) long, very minutely cancellate. (Gleason and Cronquist 1991; Kral 1983; Musselman and Mann 1978; Pennell 1935; Small 1933; Vincent 1982)
Diagnostic Characteristics: This species is most similar in its habit, appearance of flowers, and alternate leaves to other root parasites such as *Castilleja* (Kral 1983); however, it is distinguished by the presence of a posterior sepal and two bractlets subtending each flower (Pennell 1935).
Duration: PERENNIAL
Reproduction Comments: This species produces showy, insect-pollinated flowers; the high degree of zygomorphy elaborated for pollination by bees (Pennell 1935).
Palustrine Habitat(s): Bog/fen
Terrestrial Habitat(s): Forest/Woodland, Savanna, Woodland - Mixed
Habitat Comments: Acidic, sandy or peaty soils in open pine flatwoods, pitch pine lowland forests, seepage bogs, palustrine pine savannahs, and other grass- and sedge-dominated plant communities. Frequently grows in ecotonal areas between peaty wetlands and xeric sandy soils. In these situations, individuals sometimes extend well into the drier communities, but seldom into the areas that support species characteristic of wetter soils. Surrounding plant communities are typically species-rich.

Schwalbea americana is primarily a Coastal Plain species of the Atlantic and Gulf coasts, with historic locations ranging from Massachusetts to Florida to east Texas. Exceptions include: a historic occurrence in sandplains near Albany, New York, which Pennell (1935) considered a remnant population of possible glacial migration along the shores of the Hudson River; a westernmost occurrence in Tennessee and Kentucky, these from sandstone knobs and ridges of the Cumberland Plateau and Highland Rim; and an inland site on the Montague Sandplain near the Connecticut River and a sandplain in Hubbardston in Massachusetts. Characteristically the species occurs in sandy (sandy peat, loamy sand, peat loam), acidic, seasonally moist soils, often subject to fires in the growing season. "Though usually surrounded by xeric soil vegetation, most often it is found on moist to seasonally wet sites such as pitch pine lowlands, moist pine flatwoods and savannas, and ecotonal areas between peaty wetlands and xeric sandy soils"; throughout its range, Schwalbea americana "occurs in species-rich communities" (Rawinski and Cassin 1986). In South Carolina, plants are found in flatwoods rather than pine savannas, where it has only been observed once to have migrated into a savanna area from adjacent flatwoods (Porcher 1993). The flatwoods are generally dominated by Pinus palustris with Quercus stellata and Q. marilandica as associates. Some sites support only oaks now, although it is believed that longleaf pine was once a component (Porcher 1993). Tephrosia virginiana and Pterocaulon pycnostachyum are present in almost every site, which are sandy, moist to dry, grassy areas (Porcher 1993). The fire regime at these sites, either prescribed or natural (or a combination of both), is a mixture of growing-season and non-growing-season burns; it is unknown what mix best favors chaffseed (Porcher 1993). Growing-season burns maintain the

grassy areas chaffseed depends upon for survival. In sites where grassy areas lie adjacent to woodlands, chaffseed is restricted to the grassy areas (Porcher 1993). In North Carolina, the species occurs on moist to dryish pine flatwoods, pine savannas, and on longleaf pine/oak sandhills, composed of Upper Cretaceous deep, white sands, at the western edge of the Coastal Plain. Habitats where Schwalbea americana occurs on Fort Bragg, North Carolina, can be summarized as follows: (1) upper ecotones of Streamhead Pocosins (shrubby headwaters and seepage areas), usually extending well out into longleaf pine/wiregrass (Pinus palustris/Aristida stricta) savannas and seldom down to where the ecotone supports moisture-requiring species such as Calamovilfa brevipilis, Panicum virgatum, Polygala lutea, Pinus serotina, Lyonia lucida, etc.; soils at these sites are usually loamy rather than clayey and thus support Quercus marilandica, Q. margarettiae, Stylodon carneus, Rhynchospora harveyi, *Lespedeza angustifolia, Ageratina aromatica, Ceanothus americana, and Cyperus plukenetii; (2) sites closer to Streamhead Pocosins or in shallow depressions in the landscape, showing an increase in soil moisture and supporting *Rhexia alifanus, *Xyris caroliniana, Buchnera floridana, Ilex glabra, Pycnanthemum flexuosum, Rhynchospora plumosa, *Aletris farinosa, Bigelowia nudata, Eupatorium leucolepis, *Juncus biflorus, and Orbexilum pedunculatum var. psoralioides; and (3) a few occurrences extend into or occur solely on drier slopes with sparser wiregrass mixed with bare sand patches, growing with Quercus laevis, Cirsium repandum, Aster linariifolius, Carphephorus bellidifolius, Gaylussacia dumosa, Pityopsis aspera var. adenolepis, and Rhynchospora grayi. Starred (*) species are characteristic of all sites except the driest. This latter plant community is known as Xeric Sandhill Scrub by Schafale and Weakley (1990). The vast majority of plants in North Carolina's Sandhills occur in sites much drier than anticipated from the conventional concepts derived from floras, literature reports, etc. (TNC 1991-93). Since so few field botanists have encountered the species during the past 50 years, there is little wonder that, at least in North and South Carolina, misconceptions have arisen over chaffseed's preferred habitat. Of all the pocosin ecotone species on Fort Bragg, Schwalbea americana is among the least moisture-dependent; soil descriptors such as "peaty" and "seasonally wet" are quite misleading. In North Carolina, the plants have been found growing on a variety of soils series, including Blaney (Arenic Hapludults), Candor (Arenic Paleudults), Gilead (Aquic Hapludults), Fuquay (Arenic Plinthic Paleudults), Lakeland (Typic Quartzipsamments), and Vaucluse (Typic Hapludults) (Hudson 1984, TNC 1991-93, NCNHP 1993). It is also often found growing in close proximity to a number of other rare Sandhills species such as Onosmodium virginianum, Phaseolus sinuatus, Pteroglossaspis ecristata, Solidago verna, Sporobolus sp.1, Tofieldia glabra (to a lesser degree), and Tridens carolinianus (TNC 1991-93, NCNHP 1993). In Virginia, a historic occurrence of Schwalbea americana along the fall belt was in moist to dry woods and clearings. Fernald (1939) reports Buchnera americana (=B. floridana) as an abundant associate of Schwalbea. Associated genera reported to occur with Schwalbea in the Southeast include grass species of Andropogon, Aristida, Panicum, and Paspalum; sedge species of Carex, Dichromena, Fimbristylis, Rhynchospora, Scleria, and other monocot species of Aletris, Calopogon, Eriocaulon, Juncus, Lachnocaulon, Xyris; as well as dicot species of Asclepias, Erigeron, Eryngium, Helenium, Heterotheca, Orbexilum, Phlox, and Polygala. In wetter sites ("grass-sedge complexes interrupted by stands of shrubs"), species of Cliftonia, Gaylussacia, Ilex (glabra, coriacea), Lyonia, Leucothoe, Myrica, and Vaccinium occur as associates (Kral 1983).

Economic Attributes

Economic Comments: The family is of economic importance because of cardiac glycosides derived from the foxglove and many fine ornamentals.

Management Summary

Stewardship Overview: Light, and perhaps competition for other resources as well, appears to be most critical to the persistence of the species. Periodic annual fire, fluctuating water tables (sufficiently high for part of the year to exclude many woody plant species) or, annual mowing to maintain an open or semi-open habitat, all appear to reduce competition for light, and thus favor *Schwalbea*. The species occurs in transient, ecotonal areas where light is sufficient, where competition is less than in surrounding habitats, and where woody plant roots are available to parasitize. However, mowing more frequently than annually (or late in the season?) could adversely affect seed production and dispersal (Rawinski and Cassin 1986). Observations on Fort Bragg, North Carolina suggest that fire may be especially important to this species (TNC 1991-93, NCNHP 1993). At many sites, burns (early in the growing season?) every two to eight years may be necessary to maintain species viability and habitat integrity.

Where the species occurs adjacent to human activities, such as ballfields or roadsides, cooperative agreements with governing authorities are necessary for protection of this species. Where the species occurs in annual burn areas fire must not be prevented. Where the species is dependent on fluctuating moisture conditions, protection of the surrounding watershed may be necessary to maintain adequate habitat conditions.

Restoration Potential: One of the most unique occurrences of Schwalbea populations in is Hoke County, North Carolina, on the bombing range of Fort Bragg. Fires from explosions occur at least annually, maintaining "open habitat", apparently suitable to this species. Four of the five extant populations in North Carolina occur here (Weakley 1988). A newly discovered Florida population was found in a burned over scrub community (White 1988). Populations in South Carolina and Georgia occur in fire-prone pine communities. Annual burning may thus favor persistence, but there is no research demonstrating the species' ability to establish or expand populations with this treatment.

The single remaining population in New Jersey occurs along a roadside which is mowed annually. It remains a "vigorous" population (Rawinski and Cassin 1986).

Preserve Selection & Design Considerations: Light, and perhaps competition for other resources as well, appears to be most critical to the persistence of the species. Periodic annual fire, fluctuating water tables, sufficiently high for part of the year to exclude many woody plant species, or, annual mowing to maintain an open or semi-open habitat, all appear to reduce competition for light, and thus favor Schwalbea. The species occurs in transient, ecotonal areas where light is sufficient, where competition is less than in surrounding habitats, and where woody plant roots are available to parasitize.

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Management Requirements: Management of Schwalbea americana populations is necessary to 1) prevent land development, agricultural practices, and wetlands modifications, where these would be harmful to populations, and 2) to prevent natural succession, and thus competition from woody vegetation. Seeding potential habitats might expand or establish S. americana populations.

Sites containing Schwalbea americana should be burned during the growing season on a three-to-five-year rotation using landscape-level, ecological burns when possible. Monitoring programs should continually evaluate the response of plants to current and new land management practices.

Monitoring Requirements: Biological monitoring is needed to document what appears to be a rapid decline in the number of individuals. Rayner (1986) reported that eight previously known South Carolina populations were extirpated, or unable to be located. New Jersey lost one of two extant populations in 1988 (Snyder 1988). Weakley (1988) reports that four North Carolina populations were last able to be located between 1949 and 1957, and are apparently now extirpated. Rayner (1986) points out that the species is difficult to locate when population size is small or the species is not flowering, making monitoring of populations difficult.

Monitoring is needed for single surviving populations in New Jersey, Florida, Mississippi, and Georgia to insure their protection; for populations in North Carolina to determine population trends in bomb site/annual burn areas; and in South Carolina, where the largest extant populations occur, to determine the optimum environmental regime, and to test management techniques.

Management Research Programs: Rawinski and Cassin (1986) reported that the effects of mowing will be assessed in 1986 for the Mississippi hayfield population. The results of this analysis were not found reported. Rayner (1988), SCNHP (1988) and Streich, New Jersey-Pennsylvania TNC began a study in 1988 to assess the effects of prescribed fires on population structure in the Francis Marion National Forest in South Carolina. This study will continue in 1989. Requirements for seed germination and seedling establishment are being researched at Garden in the Woods, New England Wildflower Society (Brumback 1988).

Management Research Needs: Research is needed to assess the effects of controlled mowing and burning and to assess the effects of soil moisture variations on this species. Formal listing as a Federally Endangered species in November 1992 will increase this species' protection, as would private and public ownership agreements with Natural Heritage Programs. Rayner (1986) reports that 11 South Carolina occurrences are still in private ownership.

Population/Occurrence Delineation **Not yet assessed**

Population/Occurrence Viability

Excellent Viability: An A-ranked occurrence of Schwalbea americana should have more than 1000 plants.

Good Viability: A B-ranked occurrence of Schwalbea americana should have between 300 and 1000 plants.

Fair Viability: A C-ranked occurrence of Schwalbea americana should have between 50 and 300 plants.

Poor Viability: A D-ranked occurrence of Schwalbea americana should have fewer than 50 plants.

Justification: The rank specifications for Schwalbea americana are based on current populations and expert opinion.

Key for Ranking Species Element Occurrences Using the Generic Approach (2008).

Date: 28Dec2004

Author: Amoroso

Notes: (Fort Bragg) (SFO 1993)

U.S. Invasive Species Impact Rank (I-Rank) Not yet assessed

Authors/Contributors

NatureServe Conservation Status Factors Edition Date: 17Dec1993

NatureServe Conservation Status Factors Author: Johnson, Roger T. and M.J. Russo (1993), rev. D. Snyder (1997), L. Morse (1999), rev. Maybury 2004

Management Information Edition Date: 17Apr1995

Management Information Edition Author: INGE SMITH; MARY RUSSO

Element Ecology & Life History Edition Date: 23Jun1992

Element Ecology & Life History Author(s): ROGER T. JOHNSON

Botanical data developed by NatureServe and its network of natural heritage programs (see Local Programs), The North Carolina Botanical Garden, and other contributors and cooperators (see Sources).

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Note: All species and ecological community data presented in NatureServe Explorer at http://explorer.natureserve.org were updated to be current with NatureServe's central databases as of **July 2013.**
Note: This report was printed on **February 25, 2014**

Citation for data on website including State Distribution, Watershed, and Reptile Range maps:
NatureServe. 2014. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Available http://explorer.natureserve.org. (Accessed: February 25, 2014).

Citation for Bird Range Maps of North America:
Ridgely, R.S., T.F. Allnutt, T. Brooks, D.K. McNicol, D.W. Mehlman, B.E. Young, and J.R. Zook. 2003. Digital Distribution Maps of the Birds of the Western Hemisphere, version 1.0. NatureServe, Arlington, Virginia, USA.

Acknowledgement Statement for Bird Range Maps of North America:
"Data provided by NatureServe in collaboration with Robert Ridgely, James Zook, The Nature Conservancy - Migratory Bird Program, Conservation International - CABS, World Wildlife Fund - US, and Environment Canada - WILDSPACE."

Citation for Mammal Range Maps of North America:
Patterson, B.D., G. Ceballos, W. Sechrest, M.F. Tognelli, T. Brooks, L. Luna, P. Ortega, I. Salazar, and B.E. Young. 2003. Digital Distribution Maps of the Mammals of the Western Hemisphere, version 1.0. NatureServe, Arlington, Virginia, USA.

Acknowledgement Statement for Mammal Range Maps of North America:
"Data provided by NatureServe in collaboration with Bruce Patterson, Wes Sechrest, Marcelo Tognelli, Gerardo Ceballos, The Nature Conservancy-Migratory Bird Program, Conservation International-CABS, World Wildlife Fund-US, and Environment Canada-WILDSPACE."

Citation for Amphibian Range Maps of the Western Hemisphere:
IUCN, Conservation International, and NatureServe. 2004. Global Amphibian Assessment. IUCN, Conservation International, and NatureServe, Washington, DC and Arlington, Virginia, USA.

Acknowledgement Statement for Amphibian Range Maps of the Western Hemisphere:
"Data developed as part of the Global Amphibian Assessment and provided by IUCN-World Conservation Union, Conservation International and NatureServe."

NOTE: Full metadata for the Bird Range Maps of North America is available at:
http://www.natureserve.org/library/birdDistributionmapsmetadatav1.pdf.

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Version 7.1 (2 February 2009)
Data last updated: July 2013

U.S. Fish & Wildlife Service

Dwarf Wedge Mussel

Alasmidonta heterodon

B. Windsor

Description - The dwarf wedge mussel has a spotty distribution in Atlantic coast drainage rivers and their tributaries from Canada to North Carolina. It is a small mussel whose shell rarely exceeds 1.5 inches in length. The shell outline is ovate or trapezoidal. The female shell is shorter, trapezoidal, and inflated in the back whereas the male shell is elongate, compressed, and ovate. The outer shell layer is brown to yellowish-brown, with greenish rays in young or pale-colored specimens. This mussel is unique in that it has two lateral teeth on its right valve and only one tooth on its left valve (opposite of all other North American mussel species).

Life History - The dwarf wedge mussel lives in shallow to deep rivers and creeks of various sizes where the current is slow to moderate. This mussel lives on muddy sand, sandy, and gravel stream bottoms that are nearly silt free. Like other freshwater mussels, this species is a filter feeder. It feeds on plankton collected from water that is passed over its gills. Reproduction occurs sexually. Females carry eggs in their gills. During spawning, the male releases sperm into the water column and the sperm is taken into the female through the gills. The resulting larvae (known as glochidia) are released from the female into the water column and must attach to a fish host to survive. While attached to the fish host, development of the glochidia continues. Once metamorphosis is complete, the juvenile mussel drops off the fish host and continues to develop on the stream bottom. Fish hosts for this species include the mottled sculpin (*Cottus bairdi*), slimy sculpin (*Cottus cognatus*), tessellated darter (*Etheostoma olmstedi*), and johnny darter (*Etheostoma nigrum*).

Conservation - The dwarf wedge mussel was federally listed as an endangered species on March 14, 1990. The decline of this species is due to human degradation of habitat and water quality which have resulted in the continuing decline and subsequent loss of this species from previously occupied habitat. Threats to the species include agricultural, domestic, organic, and industrial pollution; impoundments that destroy habitat and cause silt deposits, low oxygen levels, and fluctuations in water levels and temperatures of the flooded area; and erosion and siltation from land clearing and construction of bridges or roads.

What You Can Do To Help - If you reside on property that borders a stream or other waterway, avoid using chemicals or fertilizers. To help control erosion and reduce runoff, maintain a buffer of natural vegetation along streambanks. Install fencing to prevent livestock from entering streams to reduce trampling of mussels, siltation, and input of waste products. Protecting water quality is the most effective way to conserve mussels.

To find out more about the dwarf wedge mussel contact:

Virginia Department of Game and Inland Fisheries
P.O. Box 11104
Richmond, Virginia 23230
(804) 367-1000

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U.S. Fish and Wildlife Service
Virginia Field Office
6669 Short Lane
Gloucester, Virginia 23061
(804) 693-6694
http://www.fws.gov

August 1999

U.S. Fish & Wildlife Service

Roanoke Logperch

D.S. Jordan

Percina rex

Description - This species presently occurs in five populations in widely separated segments of the upper Roanoke, Pigg, Smith, Nottoway, and Meherrin Rivers. This small fish can grow up to 4.5 inches in length. Its back is dark green and its sides are greenish to yellowish, both with dark markings; the belly is white to yellowish.

Life History - The logperch typically inhabits medium-to-large, warm, usually clear streams and small rivers of moderate to low gradient. Adults usually inhabit the main body of stream pools, runs, and riffles and select areas with exposed, silt free gravel substrate. In the Roanoke and Pigg Rivers, adults were found primarily in runs and riffles. In the Nottoway River, adults were found primarily in pools. Young are usually found in slow runs and pools with clean sandy bottoms. Spawning occurs in April or May in deep runs over gravel and small cobble and logperch typically bury their eggs with no subsequent parental care. This species commonly lives five to six years.

U.S. Fish and Wildlife Service
Virginia Field Office
6669 Short Lane
Gloucester, Virginia 23061
(804) 693-6694
http://www.fws.gov
August 2003

Logperch actively feed during the warmer months by flipping over stones with their snout and ingesting the exposed prey that consists of bottom-dwelling insects.

Conservation - The Roanoke logperch was listed as an endangered species on August 18, 1989. It appears that massive habitat loss associated with the construction of the large impoundments of the Roanoke River Basin in the 1950s and 1960s (Roanoke Rapids, Gaston, Kerr, Leesville, Smith Mountain, and Philpott Reservoirs) was the original cause of significant population declines of this species. These reservoir systems resulted in major disruptions in the ability of this species to move throughout its historic range. The populations in the Roanoke and Nottoway basins probably represent remnants of much larger populations that once occupied much of the Roanoke and Nottoway River drainage upstream of the fall line. All the populations are small and no genetic exchange occurs among them because they are separated by large impoundments and wide river gaps. Each population is vulnerable because of its relatively low density and limited range. Current threats are nonpoint source pollution and spills and accidents associated with chemical releases and destruction and degradation of habitat. Small logperch populations could go extinct with minor habitat degradation. Water withdrawals may pose a serious threat to the species in the future as the human population of the Roanoke River basin increases.

What You Can Do To Help - If you own property that borders a stream or other waterway, avoid using chemicals or fertilizers. To help control erosion and reduce runoff, maintain a buffer of natural vegetation along the stream bank. Install fencing to prevent livestock from entering the stream, this will reduce siltation and input of waste products.

To find out more about the Roanoke logperch contact:

Virginia Department of Game and Inland Fisheries
P.O. Box 11104
Richmond, Virginia 23230
(804) 367-1000

References

Jenkins, R.E. and N.M. Burkhead. 1993. Freshwater fishes of Virginia. American Fisheries Society, Bethesda, Maryland.

Rosenberger, A.E. 2002. Multi-scale habitat use patterns of Roanoke logperch (*Percina rex*) in Virginia rivers: a comparison among populations over ontogeny. Dissertation submitted to the Dept. of Fisheries and Wildlife Sciences, Virginia Polytechnic Institute and State University, Blacksburg, VA.

Simonson, T.D. and R.J. Neves. 1986. A status survey of the orangefin madtom and Roanoke logperch. Report to Virginia Commission of Game and Inland Fisheries, Richmond, Virginia.

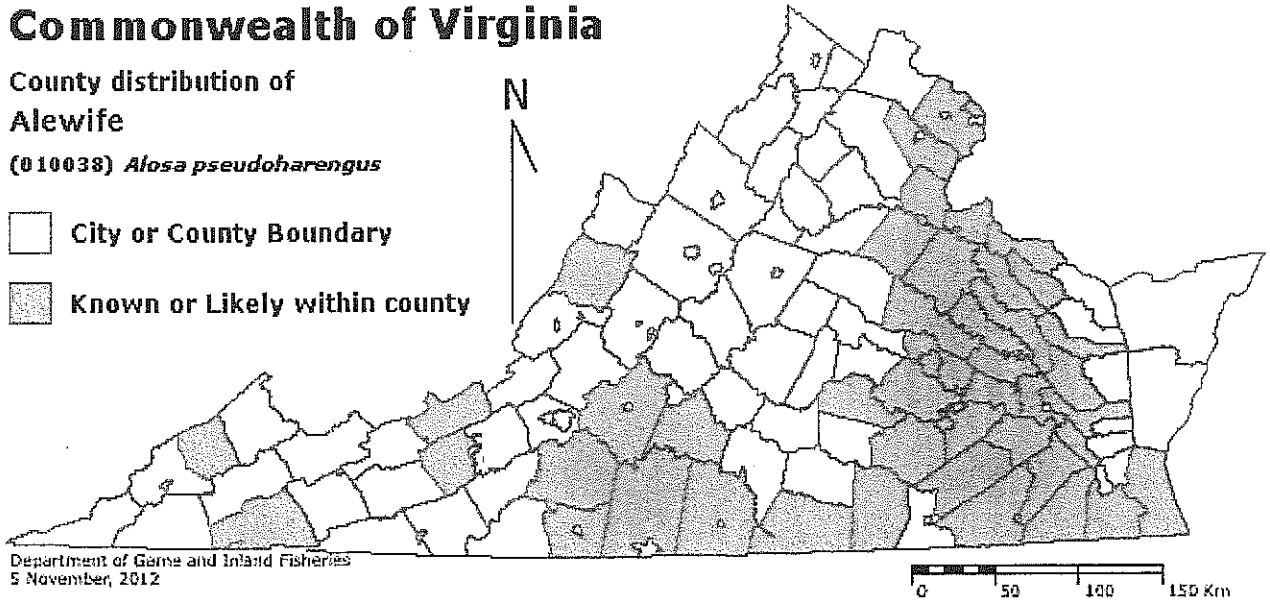
U.S. Fish and Wildlife Service. 1992. Roanoke logperch (*Percina rex*) recovery plan. Newton Corner, Massachusetts.

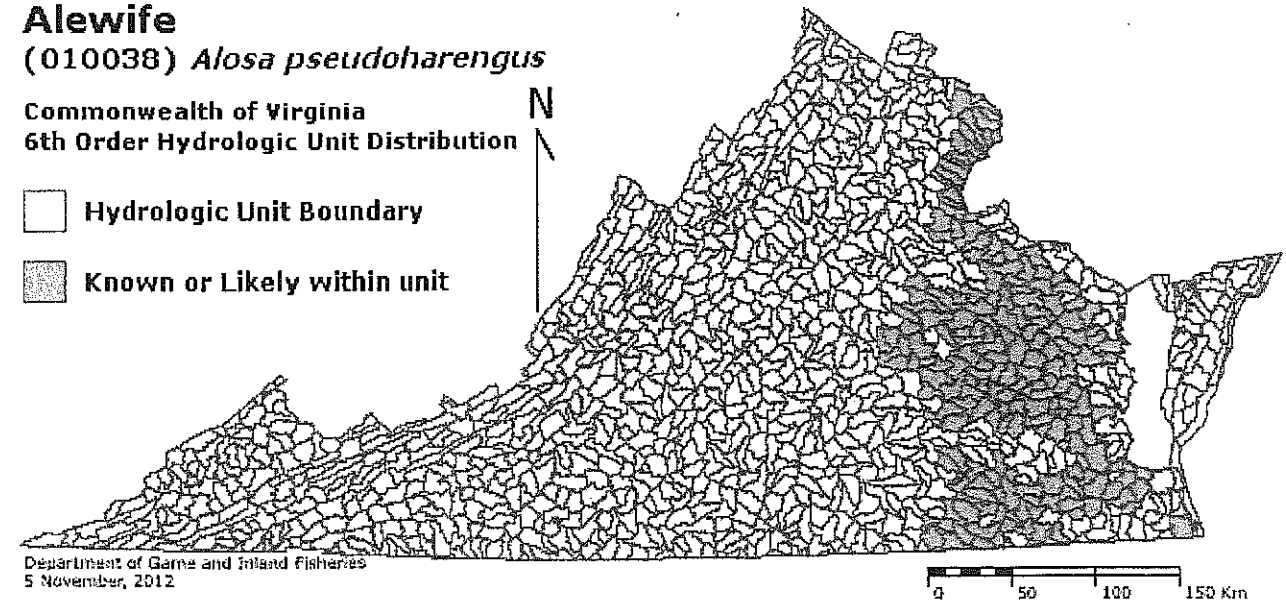
Virginia Department of Game and Inland Fisheries

2/12/2014 11:20:17 AM

Fish and Wildlife Information Service

Occurence chapter for Alewife (010038)





County Occurrences

County	County Name	General Occurrence	Resident Occurrence	Seasonal Occurrence
007	Amelia	1 - Known		
013	Arlington	1 - Known		
017	Bath	1 - Known		
019	Bedford	1 - Known	1 - Known	
025	Brunswick	1 - Known		
031	Campbell	1 - Known		
033	Caroline	1 - Known	1 - Known	
036	Charles City	1 - Known	1 - Known	
041	Chesterfield	1 - Known	1 - Known	
051	Dickenson	1 - Known	1 - Known	
053	Dinwiddie	1 - Known	1 - Known	
057	Essex	1 - Known	1 - Known	
059	Fairfax	1 - Known	1 - Known	
067	Franklin	1 - Known	1 - Known	
071	Giles	1 - Known	1 - Known	
073	Gloucester	1 - Known	1 - Known	
083	Halifax	1 - Known	1 - Known	
085	Hanover	1 - Known	1 - Known	
087	Henrico	1 - Known	1 - Known	
089	Henry	1 - Known	1 - Known	
093	Isle of Wight	1 - Known		
095	James City	1 - Known	1 - Known	
097	King and Queen	1 - Known	1 - Known	
099	King George	1 - Known	1 - Known	
101	King William	1 - Known	1 - Known	
117	Mecklenburg	1 - Known	1 - Known	
119	Middlesex	1 - Known	1 - Known	
127	New Kent	1 - Known	1 - Known	
143	Pittsylvania	1 - Known	1 - Known	
149	Prince George	1 - Known	1 - Known	

153	Prince William	1 - Known	1 - Known	
155	Pulaski	1 - Known	1 - Known	
159	Richmond	1 - Known		
175	Southampton	1 - Known	1 - Known	
177	Spotsylvania	1 - Known		
179	Stafford	1 - Known		
181	Surry	1 - Known	1 - Known	
183	Sussex	1 - Known	1 - Known	
191	Washington	1 - Known		
193	Westmoreland	1 - Known	1 - Known	
199	York	1 - Known	1 - Known	
550	Chesapeake City	1 - Known	1 - Known	
570	Colonial Heights City	1 - Known		
630	Fredericksburg City	1 - Known		
670	Hopewell City	1 - Known		
700	Newport News City	1 - Known	1 - Known	
730	Petersburg City	1 - Known		
760	Richmond City	1 - Known		
800	Suffolk City	1 - Known	1 - Known	
810	Virginia Beach City	1 - Known	1 - Known	

County Occurrence Comments: Not Available

References for County Occurrence

Ref.Id Citation

4205 Jenkins, R. E., N. M. Burkhead, 1994, Freshwater Fishes of Virginia, 1079 pgs., American Fisheries Society, Bethesda, MD

USGS National 6th Order Watershed Occurrences

HU6	6th Order Watershed Name
AS20	Back Bay
CB06	Dragon Swamp-Dragon Run
CB07	Exol Swamp
CB08	Dragon Swamp-Timber Branch Swamp

CB09	Dragon Swamp-Meggs Bay
CB10	Piankatank River-Carvers Creek
CB11	Piankatank River-Hills Bay
CB26	Lower Chesapeake Bay-Little Creek
CL02	Somerton Creek-Chapel Swamp
CL03	Somerton Creek-March Swamp
CL04	Buckhorn Creek
CM19	Meherrin River-Douglas Run
CM20	Meherrin River-Falling Run
CM21	Meherrin River-Greensville/Southampton Co. Border
CM24	Fontaine Creek-Cattail Creek
CM27	Fontaine Creek-Mill Swamp
CM29	Meherrin River-Buckhorn Swamp
CM30	Upper Tarrara Creek
CM31	Lower Tarrara Creek
CM32	Meherrin River-Barretts Crossroads
CU18	Nottoway River-Island Swamp
CU25	Stony Creek-Southwest Swamp
CU28	Rowanty Creek
CU30	Nottoway River-Cabin Point Swamp
CU32	Nottoway River-Austin Branch
CU33	Hunting Quarter Swamp
CU34	Spring Creek
CU35	Raccoon Creek
CU36	Nottoway River-Parker Run
CU39	Three Creek-Otterdam Swamp
CU40	Three Creek-Poplar Swamp
CU42	Three Creek-Hornet Swamp
CU43	Nottoway River-Buckhorn Swamp
CU44	Assamoosick Swamp-Pigeon Swamp
CU45	Seacorrie Swamp
CU46	Assamoosick Swamp-Mill Run

CU47	Mill Swamp-Darden Pond
CU48	Nottoway River-Courtland
CU49	Nottoway Swamp
CU51	Nottoway River-Round Gut
CU62	Blackwater River-Antioch Swamp
CU65	Seacock Swamp-Round Hill Swamp
CU66	Blackwater River-Corrowaugh Swamp
CU67	Black Creek-Cattail Swamp
CU68	Blackwater River-Cypress Swamp
CU70	Blackwater River-Union Camp Holding Pond
JA39	Appomattox River/Lake Chesdin-Cattle Creek
JA40	Appomattox River-Oldtown Creek
JA42	Swift Creek-Third Branch
JA44	Swift Creek-Franks Branch
JA45	Appomattox River-Ashton Creek
JL01	James River-Almond Creek
JL02	Falling Creek
JL03	James River-Proctors Creek
JL04	Fourmile Creek
JL05	Turkey Island Creek
JL06	James River-Curles Creek
JL07	James River-Bailey Creek
JL08	Powell Creek
JL09	Herring Creek
JL10	Queens Creek-Courthouse Creek
JL11	James River-Flowerdew Hundred Creek
JL12	Wards Creek
JL13	James River-Kittewan Creek
JL14	Upper Chippokes Creek
JL15	James River-Sunken Meadow Pond
JL17	Chickahominy River-Stony Run
JL19	Chickahominy River-Powhite Creek

JL20	Chickahominy River-Higgins Swamp
JL21	White Oak Swamp
JL22	Chickahominy River-Toe Ink Swamp
JL23	Chickahominy River-Rumley Marsh
JL24	Chickahominy River-Big Swamp
JL25	Chickahominy River-Barrows Creek
JL26	Diascund Creek-Diascund Creek Reservoir
JL27	Diascund Creek-Mill Creek
JL28	Chickahominy River-Yarmouth Creek
JL29	Chickahominy River-Morris Creek
JL30	James River-Broad Swamp
JL31	Powhatan Creek
JL32	Grays Creek
JL33	James River-Lower Chippokes Creek
JL34	College Creek
JL35	James River-Skiffes Creek
JL36	Lawnes Creek
JL37	James River-Morrisons Creek
JL38	Warwick River
JL40	Cypress Creek
JL41	Pagan River-Jones Creek
JL42	Chuckatuck Creek
JL43	James River-Cooper Creek
JL44	Lake Kelby-Speights Run
JL45	Cohoon Creek
JL46	Lake Prince
JL47	Western Branch Reservoir
JL48	Nansemond River-Cedar Lake
JL49	Nansemond River-Bennett Creek
JL51	Southern Branch Elizabeth River-New Mill Creek
JL53	Southern Branch Elizabeth River-Deep Creek
JL54	Eastern Branch Elizabeth River

JL55	Western Branch Elizabeth River
JL56	Elizabeth River
JL57	Willoughby Bay
JL59	Hampton Roads Channel
JM78	James River-Mohawk Creek
JM79	Beaverdam Creek
JM80	James River-Fine Creek
JM81	Norwood Creek
JM82	James River-Little River
JM83	James River-Bernards Creek
JM84	Tuckahoe Creek
JM85	James River-East Branch Tuckahoe Creek
JM86	James River-Little Westham Creek
PL22	Difficult Run
PL23	Potomac River-Nichols Run-Scott Run
PL24	Potomac River-Pimmit Run
PL25	Potomac River-Fourmile Run
PL26	Cameron Run
PL27	Dogue Creek
PL28	Potomac River-Little Hunting Creek
PL29	Pohick Creek
PL30	Accotink Creek
PL47	Occoquan River/Occoquan Reservoir
PL48	Occoquan River-Belmont Bay
PL49	Neabsco Creek
PL50	Potomac River-Occoquan Bay
PL51	Powells Creek
PL52	Quantico Creek
PL53	Chopawamsic Creek
PL54	Potomac River-Tank Creek
PL55	Beaverdam Run
PL57	Lower Aquia Creek

PL58	Accokeek Creek
PL60	Potomac Creek-Beaverdam Creek
PL61	Potomac River-Passapatanzy Creek
RA46	Rappahannock River-Hazel Run
RA47	Massaponax Creek
RA48	Rappahannock River-Muddy Creek
RA49	Rappahannock River-Mount Creek
RA50	Mill Creek
RA51	Rappahannock River-Goldenvale Creek
RA52	Rappahannock River-Portobago Creek
RA53	Elmwood Creek
RA54	Rappahannock River-Peedee Creek
RA55	Occupacia Creek
RA56	Rappahannock River-Brockenbrough Creek
RA57	Cat Point Creek-The Big Swamp
RA58	Cat Point Creek-Menokin Bay
RA59	Mount Landing Creek
RA60	Hoskins Creek
RA61	Piscataway Creek
RA62	Rappahannock River-Little Carter Creek
RA63	Little Totuskey Creek
RA64	Totuskey Creek
RA66	Rappahannock River-Cedar Creek
RA67	Lancaster Creek
RA68	Rappahannock River-Parrotts Creek
RA69	Rappahannock River-Lagrange Creek
RA70	Western Branch Corrotoman River
RA72	Corrotoman River-Taylor Creek
RA73	Rappahannock River-Carter Creek
RA74	Rappahannock River-Locklies Creek
YO08	Taylors Creek
YO09	South Anna River-Turkey Creek

YO10	Newfound River
YO11	South Anna River-Cedar Creek
YO23	North Anna River-Hawkins Creek
YO25	Lower Little River
YO26	North Anna River-Long Creek
YO27	Pamunkey River-Mechumps Creek
YO28	Crump Creek
YO29	Pamunkey River-Judy Swamp
YO30	Totopotomoy Creek
YO31	Pamunkey River-Hollyfield Pond
YO32	Moncuin Creek
YO33	Black Creek
YO34	Pamunkey River-Montague Creek
YO35	Jacks Creek
YO36	Pamunkey River-Cohoke Mill Creek
YO37	Pamunkey River-Mill Creek
YO49	Reedy Creek
YO50	Mattaponi River-Union Swamp
YO52	Beverly Run
YO54	Chapel Creek
YO55	Mattaponi River-Gravel Run
YO56	Herring Creek
YO57	Mattaponi River-Aylett Creek
YO58	Garnetts Creek
YO59	Mattaponi River-Courthouse Creek
YO60	Mattaponi River-Heartquake Creek
YO61	Mattaponi River-Cabin Creek
YO62	Ware Creek
YO63	York River-Philbates Creek
YO64	Poropotank River
YO65	York River-Skimino Creek
YO66	York River-Jones Creek

YO67	Queen Creek
YO68	York River-Carter Creek
YO69	York River-Sarah Creek

6th Order Hydrologic Unit Comments: 6th order hydrologic unit distribution reviewed in year 2009 by Virginia Department of Game and Inland Fisheries Taxonomic Advisory Committees.

References for 6th Order Hydrologic Unit

Ref.Id	Citation
12325	VDGIF, 2009, Tiered Species Distributions by 6th Order Watershed, as Reviewed by VDGIF's Taxonomic Advisory Committees

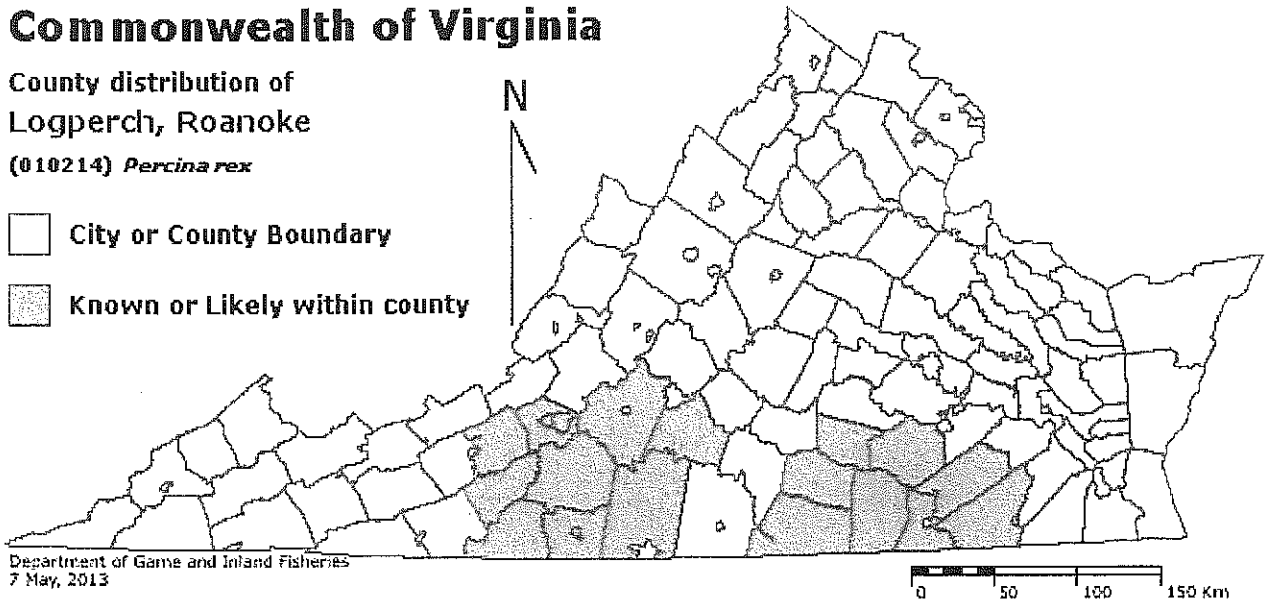
audit no. 522493 2/12/2014 11:20:17 AM Virginia Fish and Wildlife Information Service

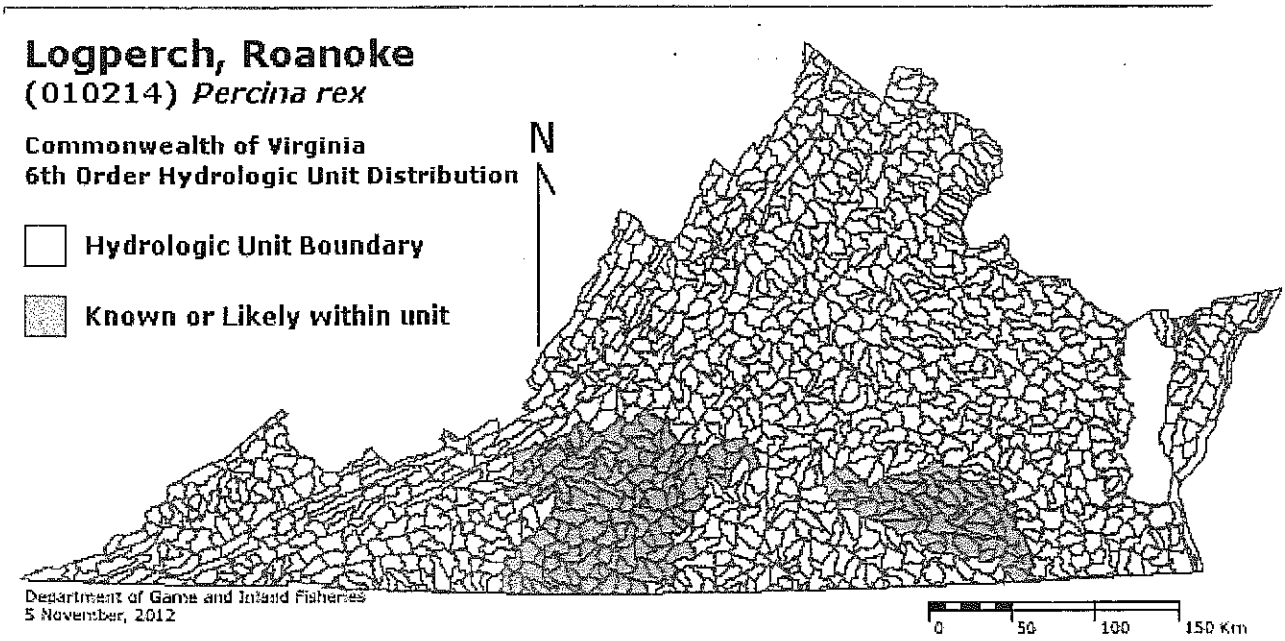
Virginia Department of Game and Inland Fisheries

2/12/2014 11:18:11 AM

Fish and Wildlife Information Service

Occurence chapter for Logperch, Roanoke (010214)





County Occurrences

County	County Name	General Occurrence	Resident Occurrence	Seasonal Occurrence
019	Bedford	1 - Known	1 - Known	
025	Brunswick	1 - Known	2 - Likely	
031	Campbell	1 - Known		
053	Dinwiddie	1 - Known	1 - Known	
063	Floyd	1 - Known	1 - Known	
067	Franklin	1 - Known	1 - Known	
081	Greensville	1 - Known	1 - Known	
089	Henry	1 - Known	1 - Known	
111	Lunenburg	2 - Likely		
117	Mecklenburg	2 - Likely		
121	Montgomery	1 - Known	1 - Known	
135	Nottoway	1 - Known		
141	Patrick	1 - Known	1 - Known	
143	Pittsylvania	1 - Known	1 - Known	
161	Roanoke	1 - Known	1 - Known	
175	Southampton	1 - Known	1 - Known	
183	Sussex	1 - Known	1 - Known	
690	Martinsville City	1 - Known		
770	Roanoke City	1 - Known	1 - Known	
775	Salem City	1 - Known	1 - Known	

General Occurrence Comments: Percina rex is restricted to and disjunctly distributed in the Piedmont and Ridge and Valley provinces of the Roanoke drainage, Virginia *811*. This species has a reported distribution in the upper Roanoke River system, Roanoke River drainage, Roanoke and Montgomery counties; Nottoway River system, Chowan River drainage, Dinwiddie and Sussex Counties; Pigg River system, Roanoke River drainage, Franklin County; Smith River system, Dan River basin, Roanoke River Drainage, Patrick County *9285*.

Resident Occurrence Comments: Percina rex is restricted to and disjunctly distributed in the Piedmont and Ridge and Valley provinces of the Roanoke drainage, Virginia *811*. This species has a reported distribution in the upper Roanoke River system, Roanoke River drainage, Roanoke and Montgomery counties; Nottoway River system, Chowan River drainage, Dinwiddie and Sussex counties; Pigg River system, Roanoke River drainage, Franklin County; Smith River system, Dan River basin, Patrick County *9285*.

References for County Occurrence

Ref.Id Citation

811 Jenkins, R.E., Ebaugh, D., Zorach, T., Lee, D.S., Gilbert, C.R., Hocutt, C.H., McAllister, R.E. (Ed.),

1978, Roanoke logperch, Percina rex, Jordan and Evermann, 1889 from the Atlas of North American Freshwater Fishes, pg. 738, N.C. Biol. Surv., N.C. State Mus. Nat. Hist., Raleigh

4205 Jenkins, R. E., N. M. Burkhead, 1994, Freshwater Fishes of Virginia, 1079 pgs., American Fisheries Society, Bethesda, MD

9285 Simonson, T. D., Neves, R. J., 1986, A status survey of the orangefin madtom (Noturus gilberti) and Roanoke logperch (Percina rex), 102 pgs.

10949 Virginia Department of Game and Inland Fisheries, 1995, Collections Database

10981 Wilcox, T., 1995, Memorandum on production of Roanoke bass at Buller Fish Cultural Station after personal communication with C.D. Stickley and Paul Angermeier

USGS National 6th Order Watershed Occurrences

HU6	6th Order Watershed Name
CU01	Nottoway River-Dry Creek
CU02	Modest Creek
CU03	Big Hounds Creek
CU04	Nottoway River-Falls Creek
CU05	Little Nottoway River-Crystal Lake
CU06	Little Nottoway River-Whetstone Creek
CU07	Nottoway River-Cedar Creek
CU08	Hurricane Branch-Long Branch
CU09	Nottoway River-Red Oak Creek
CU10	Tommeheton Creek
CU11	Nottoway River-Beaver Pond Creek
CU12	Waqua Creek
CU13	Nottoway River-Turkey Egg Creek
CU14	Sturgeon Creek
CU15	Nottoway River-Indian Creek
CU16	Buckskin Creek
CU17	Nottoway River-Harris Swamp
CU18	Nottoway River-Island Swamp
CU19	Butterwood Creek
CU20	White Oak Creek
CU21	Stony Creek-Rocky Run Creek
CU22	Stony Creek-Chamberlains Bed

CU23	Upper Sappony Creek
CU24	Lower Sappony Creek
CU25	Stony Creek-Southwest Swamp
CU26	Hatcher Run
CU27	Gravelly Run
CU28	Rowanty Creek
CU29	Moores Swamp-Jones Hole Swamp
CU30	Nottoway River-Cabin Point Swamp
CU31	Nebletts Mill Run-Joseph Swamp
CU32	Nottoway River-Austin Branch
CU33	Hunting Quarter Swamp
CU34	Spring Creek
CU35	Raccoon Creek
CU36	Nottoway River-Parker Run
CU37	Three Creek-Slagles Lake
CU38	Maclins Creek
CU39	Three Creek-Otterdam Swamp
CU40	Three Creek-Poplar Swamp
CU41	Angelico Creek
CU42	Three Creek-Hornet Swamp
CU43	Nottoway River-Buckhorn Swamp
CU44	Assamoosick Swamp-Pigeon Swamp
CU45	Seacorrie Swamp
CU46	Assamoosick Swamp-Mill Run
CU47	Mill Swamp-Darden Pond
CU48	Nottoway River-Courtland
CU49	Nottoway Swamp
CU50	Mill Creek
CU51	Nottoway River-Round Gut
RD01	Dan River-Ivy Creek
RD02	Dan River-Archies Creek
RD03	Little Dan River

RD04	Dan River-Elk Creek
RD05	Dan River-Peters Creek
RD06	Upper South Mayo River-Poorhouse Creek
RD07	Russell Creek
RD08	Spoon Creek
RD09	Lower South Mayo River-Crooked Creek
RD10	North Mayo River-Polebridge Creek
RD11	Horse Pasture Creek
RD12	North Mayo River-Koger Creek
RD13	Mayo River-Pawpaw Creek
RD14	Dan River-Matrimony Creek
RD15	Smith River-Rock Castle Creek
RD16	Sycamore Creek-Little Sycamore Creek
RD17	Smith River-Widgeon Creek
RD18	Rennet Bag Creek-Otter Creek
RD19	Smith River/Philpott Reservoir-Nicholas Creek
RD20	Smith River/Philpott Reservoir
RD21	Town Creek
RD22	Smith River-Blackberry Creek
RD23	Reed Creek-Little Reed Creek
RD24	Smith River-Beaver Creek
RD25	Marrowbone Creek
RD26	Smith River-Mulberry Creek
RD27	Upper Leatherwood Creek
RD28	West Fork Leatherwood Creek-Peters Branch
RD29	Lower Leatherwood Creek
RD30	Smith River-Fall Creek
RD31	Cascade Creek
RD32	Dan River-Trotters Creek
RD34	Upper Sandy River
RD35	South Prong Sandy River-Tanyard Creek
RD36	Lower Sandy River

RD37	Dan River-Sandy Creek (West)
RD38	Fall Creek
RD52	Banister River-Strawberry Creek
RD53	Bearskin Creek
RD54	Banister River-White Oak Creek
RD55	Cherrystone Creek
RD56	Whitehorn Creek-Mill Creek
RD57	Whitehorn Creek-Georges Creek
RD59	Stinking River
RD63	Upper Sandy Creek
RU01	Goose Creek-Lick Fork
RU02	Bottom Creek
RU03	South Fork Roanoke River-Purgatory Creek
RU04	Elliott Creek
RU05	South Fork Roanoke River-Brake Branch
RU06	North Fork Roanoke River-Dry Run
RU07	North Fork Roanoke River-Wilson Creek
RU08	North Fork Roanoke River-Bradshaw Creek
RU09	Roanoke River-Sawmill Hallow
RU10	Mason Creek
RU11	Tinker Creek-Buffalo Creek
RU12	Carvin Creek
RU13	Tinker Creek-Glade Creek
RU14	Roanoke River-Peters Creek
RU15	Back Creek
RU16	Roanoke River/Smith Mountain Lake-Lynville Creek
RU17	Beaverdam Creek
RU18	Roanoke River/Smith Mountain Lake-Stony Creek
RU19	Roanoke River/Smith Mountain Lake-Bettys Creek
RU20	North Fork Blackwater River
RU21	South Fork Blackwater River

RU22	Blackwater River-Madcap Creek
RU23	Maggodee Creek
RU24	Blackwater River-Smith Mountain Lake-Standiford Creek
RU25	Gills Creek
RU26	Blackwater River/Smith Mountain Lake-Bull Run
RU27	Roanoke River/Smith Mountain Lake-Craddock Creek
RU28	Roanoke River/Leesville Lake-Clay Branch
RU29	Pigg River-Turners Creek
RU30	Pigg River-Powder Mill Creek
RU31	Big Chestnut Creek
RU32	Pigg River-Owens Creek
RU33	Snow Creek-Crab Creek
RU34	Turkeycock Creek
RU35	Snow Creek-Gourd Creek
RU36	Pigg River-Tomahawk Creek
RU37	Pigg River-Fryingpan Creek
RU38	Roanoke River/Leesville Lake-Old Womans Creek
RU39	Goose Creek-North Fork Goose Creek
RU40	Bore Auger Creek
RU41	Goose Creek-Wolf Creek
RU42	Stony Fork
RU43	Goose Creek-Mill Creek
RU44	Carter Mill Creek
RU45	Goose Creek-Back Creek
RU46	Roanoke River-Bishop Creek
RU47	Sycamore Creek-Little Sycamore Creek
RU48	Roanoke River-Reed Creek
RU49	Big Otter River-Stony Creek
RU50	North Otter Creek
RU51	Elk Creek-Chestnut Branch
RU52	Big Otter River-Roaring Run
RU53	Machine Creek

RU54	Little Otter River-Johns Creek
RU55	Big Otter River-Orrix Creek
RU56	Buffalo Creek
RU57	Big Otter River-Johnson Creek
RU58	Flat Creek
RU59	Big Otter River-Troublesome Creek
RU60	Roanoke River-Beechtree Creek
RU61	Seneca Creek
RU62	Straightstone Creek
RU65	Falling River-Reedy Creek
RU66	Falling River-Mulberry Creek
RU67	South Fork Falling River-Button Creek
RU68	Mollys Creek
RU69	Falling River-Suck Creek
RU76	Big Cub Creek

6th Order Hydrologic Unit Comments: 6th order hydrologic unit distribution reviewed in year 2009 by Virginia Department of Game and Inland Fisheries Taxonomic Advisory Committees.

References for 6th Order Hydrologic Unit

Ref.Id Citation

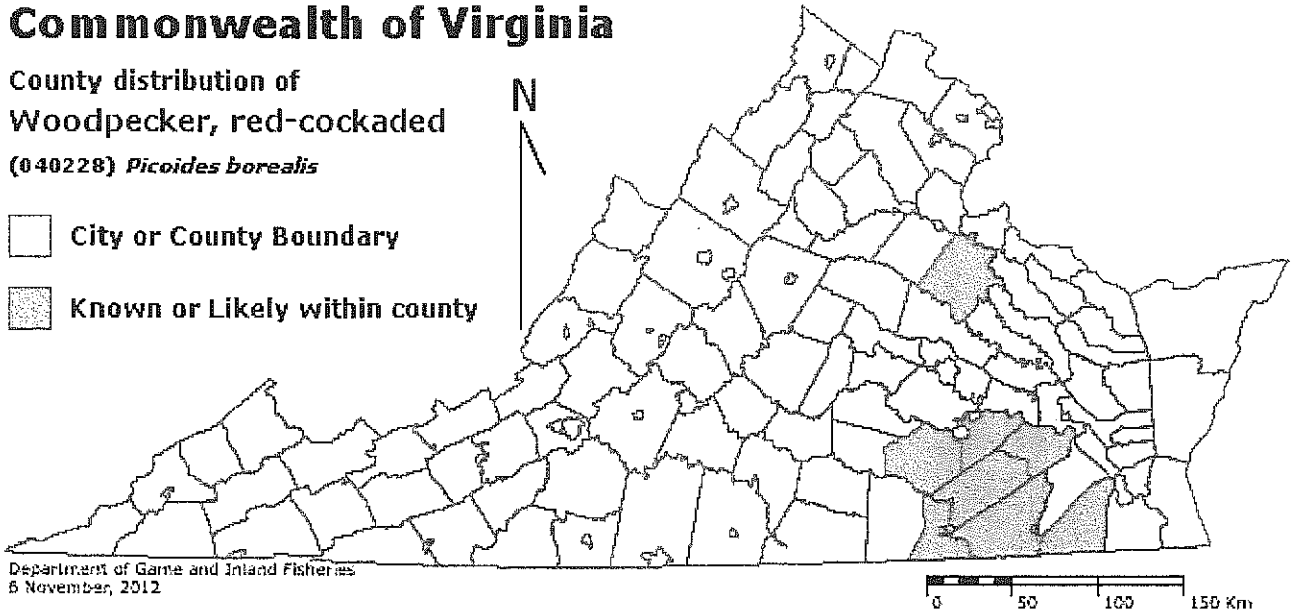
12325 VDGIF, 2009, Tiered Species Distributions by 6th Order Watershed, as Reviewed by VDGIF's Taxonomic Advisory Committees

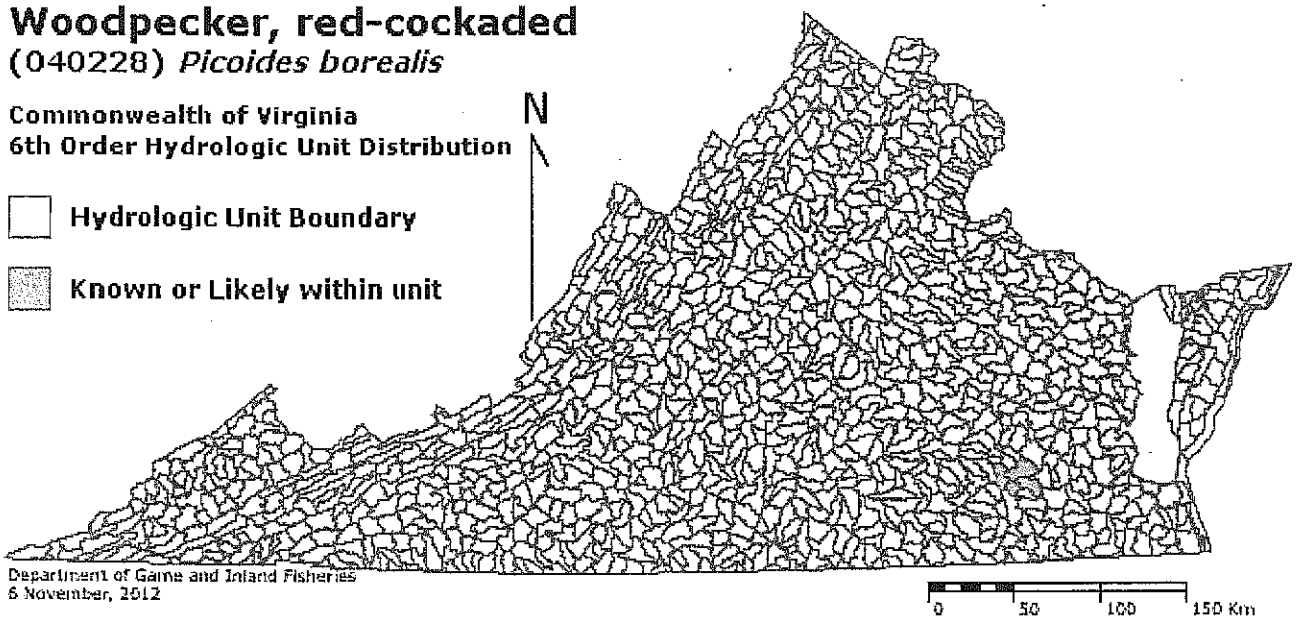
Virginia Department of Game and Inland Fisheries

2/12/2014 11:19:00 AM

Fish and Wildlife Information Service

Occurence chapter for Woodpecker, red-cockaded (040228)





County Occurrences

County	County Name	General Occurrence	Resident Occurrence	Seasonal Occurrence

003	Albemarle			
025	Brunswick			
033	Caroline	1 - Known		
041	Chesterfield			
053	Dinwiddie	2 - Likely		
071	Giles			
081	Greensville	2 - Likely		
087	Henrico			
093	Isle of Wight			
149	Prince George	2 - Likely		
175	Southampton	1 - Known		
181	Surry	2 - Likely		
183	Sussex	1 - Known	1 - Known	
595	Emporia City	2 - Likely		
620	Franklin City	2 - Likely		
800	Suffolk City	1 - Known		
810	Virginia Beach City			

General Occurrence Comments: A comprehensive survey of its distribution in Virginia was conducted from 1976-1978. Cavity trees were located in Virginia Beach, Southampton, Isle of Wight, Surry, Sussex, Brunswick and Prince George counties. Birds were observed only in Isle of Wight, Sussex and Prince George counties, with nesting verified only in Sussex county *456*. They are found only in Sussex County and Suffolk *4291,9577*. One adult bird was sited in a residential area of York county in the spring of 1987 *9290*. It is a very rare permanent resident south of Chesapeake Bay and the James and Appomattox rivers *8511*. In Virginia, this species is extremely rare, with only five currently active colonies, all in Sussex County. The status of one colony in the City of Suffolk is uncertain at this time *9286*.

Resident Occurrence Comments: This is a rare permanent resident on the Coastal Plain south of the Chesapeake Bay and the James and Appomattox Rivers, decreasing in recent years, at present most nesting sites are in Sussex County. There is one record for western Virginia: Cumberland Gap, Lee Co. 21 October 1973 *700*. There are no known historical or present records for most cities with the exception of Suffolk (portion which once was Nansemond County). The present distribution is limited to Sussex County and Suffolk *4291,9577*. These records are from the Virginia Game Commission Red-cockaded Woodpecker Project. One individual adult was observed in York County through the spring in 1987, but no nesting behavior was observed *9290*. In Virginia, this species is extremely rare with only five currently active colonies, all in Sussex County. The status of one colony in the City of Suffolk is uncertain at this time *9286*.

Seasonal Occurrence Comments: This is a permanent resident in Virginia *700*, non-migratory *436*. In Sussex County, eggs are present in nests from May 8-27. The young are in the nests from May 16-June 19 *700*. They are resident only in Sussex County and Suffolk. One adult was observed in York County in the spring of 1987. This species is believed to breed between 15 March and 31 August *8510*.

References for County Occurrence

Ref.Id Citation

456 Byrd, M.A., Linzey, D.W. (Ed.), 1979, Red-cockaded woodpecker from the proceedings of the symposium on endangered and threatened plants and animals of Virginia, pg. 425-427, Extension Div, VA Tech, Blacksburg, VA

700 Virginia Society of Ornithology, 1979, Virginia's Birdlife: An Annotated Check-list, Virginia Avifauna No. 2, 118 pgs., Virginia Society of Ornithology, Lynchburg, VA

2804 Commission, Game, Red-cockaded woodpecker project, Game Comm.

4291 Byrd, M.A., R.A. Beck, W.H. Taylor, 1984, Red-cockaded woodpecker investigations from the Virginia Non-game and Endangered Wildlife Investigations Annual Report, July 1, 1983 - June 30, 1984, pg. 57-60, VA Dept. of Game and Inland Fisheries

8510 Virginia Society of Ornithology and the, Virginia Dept. of Game and Inland Fisheries, VSO Atlas Committee (Ed.), 1989, The Breeding Bird Atlas Project Handbook and Data, 1984-1989, 20 pgs., VSO

8511 Ornithology, Virginia Society of, Teta Kain (Ed.), 1987, Virginia's Birdlife: an Annotated Checklist , Virginia Avifauna Number 3, 127 pgs., VSO

9286 Terwilliger, K.T., 1991, Virginia's endangered species: Proceedings of a symposium. Coordinated by the Virginia Dept. of Game and Inland Fisheries, Nongame and Endangered Species Program, 672 pp. pgs., McDonald and Woodward Publ. Comp., Blacksburg, VA

9290 Beck, R. A., 1987, Red-cockaded woodpecker investigations, Va.nongame and endangered species annual report, pg. 154-158

9291 Beck, R. A., 1988, Red-cockaded woodpeckers investigations, Nongame and endangered species annual report, pg. 129-133

9577 Theberge, J. B., 1989, Guidelines to drawing ecologically sound boundaries for national parks and nature reserves, Envir. Manage., Vol. 13, Num. 6, pg. 695-702

9597 Service, U. S. Fish and Wildl., 1990, Endangered and threatened wildlife and plants supplement to Jan. 1, 1989 list, 1 pgs.

USGS National 6th Order Watershed Occurrences

HU6	6th Order Watershed Name
CU44	Assamoosick Swamp-Pigeon Swamp
CU45	Seacorrie Swamp
CU57	Blackwater River-Coppahaunk Swamp
CU63	Seacock Swamp-Reddy Hole Branch

6th Order Hydrologic Unit Comments: 6th order hydrologic unit distribution reviewed in year 2009 by Virginia Department of Game and Inland Fisheries Taxonomic Advisory Committees.

References for 6th Order Hydrologic Unit

Ref.Id Citation

12325 VDGIF, 2009, Tiered Species Distributions by 6th Order Watershed, as Reviewed by VDGIF's Taxonomic Advisory Committees

Troy Andersen Mar 6

to me

Courtney:

We have reviewed the project package received on February 25, 2014 for the Greensville County Government Center Master Plan. The following comments are provided under provisions of the Endangered Species Act of 1973 (16 U.S.C. 1531-1544, 87 Stat. 884), as amended, and Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c, 54 Stat. 250) as amended.

We concur with the determinations provided in the Species Conclusion Table dated February 25, 2014 and have no further comments. Should project plans change or if additional information on the distribution of listed species or critical habitat becomes available, this determination may be reconsidered. If you have any questions, please contact me.

V/R
Troy

Troy M. Andersen
Endangered Species/Conservation Planning Assistance Supervisor
USFWS – Virginia Field Office
Phone: 804-824-2337
Mobile: 804-654-9235
Visit us at: http://www.fws.gov/northeast/virginiafield/

6.0 List of Preparers

Enviro-Utilities, Inc.
P.O. Box 73133
Richmond, Virginia 23235
804-796-3911
804-796-1090 (fax)
www.enviro-utilities.com

- Alexis E. Jones, M.S., CPSS – alexis@enviro-utilities.com
  - Virginia Certified Professional Soil Scientist, no. 216
  - Certified Wetlands Delineator
  - M.S. Crop and Soil Environmental Science 2006. Virginia Polytechnic Institute and State University, College of Agriculture and Life Sciences, Blacksburg, VA.
  - B.S. Soil and Land Management 2004. University of Wisconsin – Stevens Point, College of Natural Resources, Stevens Point, WI.
- Gregory T. Monnett, PhD, CPSS, AOSE – greg@enviro-utilities.com
  - Virginia Certified Professional Soil Scientist, no. 155
  - Ph.D. Environmental Soil Science 1992. Virginia Polytechnic Institute and State University, Blacksburg, VA
  - M.S. Soil Science 1987. Clemson University, Clemson, SC.
  - B.S. Agronomy 1984. Delaware Valley College of Science and Agriculture, Doylestown, PA
- Margaret M. Monnett – margaret@enviro-utilities.com
  - Certified Wetlands Delineator
  - Section 106 Certified
  - B.S. Agronomy 1989. Virginia Polytechnic Institute and State University, Blacksburg, VA
- Courtney T. Heckler – courtneyheckler@gmail.com
  - B.S. Forestry and Wildlife 2006. Virginia Polytechnic Institute and State University, Blacksburg, VA

Greensville County Sheriff's Office

"Office of the Sheriff"

James R. Edwards Jr.
Sheriff

William T. Jarratt, Jr., Major – Chief Deputy
Barbara S. Stroud, Investigations Captain
Chris E. Rose, Patrol Lieutenant
Katina M. Harrison, Communications Sergeant

May 13, 2014

Baxter Bailey & Associates
11 East Franklin Street
Emporia, VA 23847

Dear Mr. Bailey:

Thank you for the very informative and productive meeting we had concerning the preliminary plans.

The preliminary plans are satisfactory and we ask that this project move forward.

Thank you again and we look forward to working with you again real soon.

Sincerely,

James R. Edwards, Jr.

Sheriff James R. Edwards, Jr.

174 Uriah Branch Way ~ Emporia, Virginia 23847
(434) 348-4200 – Phone
(434) 634-9615 – Fax
gcso@telpage.net - Email

BAXTER BAILEY & ASSOCIATES
ARCHITECTS

MEMO

SUBJECT: Greensville County Sheriff's Office Expansion
Part 3 – Alternative Solutions

DATE: Thursday, April 24, 2014

Betsy,

We wanted to touch base with you regarding the preliminary floor plan we left with you for your review and comment. If you do have comments/suggestions we would be happy to address them; if not then we would like to continue with finalizing/submitting the PAR.

As a gentle reminder, these drawings are preliminary in nature; if the project were to proceed past the PAR stages, rest assured that the design process would continue and we would work closely with you, Sheriff Edwards, Major Jarratt and other staff members to ensure that your needs are met and reflected in the plans.

Let me know if you have any questions, and we look forward to hearing from you.

Sincerely,

Zack Saunders

Cc: Charles M. Veliky

THE PLUMMER HOUSE ● 11 EAST FRANKLIN STREET ● RICHMOND, VA 23219
(804) 343-1833 ● FAX (804) 643-8370 ● E-MAIL: jbb@baxterbailey.com

Greensville County Sheriff's Office

"Office of the Sheriff"

James R. Edwards Jr.
Sheriff

William T. Jarratt, Jr., Major – Chief Deputy
Barbara S. Stroud, Investigations Captain
Chris E. Rose, Patrol Lieutenant
Katina M. Harrison, Communications Sergeant

March 18, 2014

Baxter Bailey & Associates
11 East Franklin Street
Emporia, VA 23847

Dear Mr. Bailey:

Thank you for the very informative and productive meeting we had this morning.

After our discussion and your explanation of the Building Deficiencies Analysis, I feel that you and your office provided a very good "picture" of our needs for our office to be more productive. I would like to make one change to the existing space request. The change involves the Dispatch Center. We would like to have a fourth station for future expansion to the plan at an estimated increase of approximately 60 s.f.

Upon this addition, we approve of the analysis and request that the project move forward.

Thank you again and we look forward to working with you again real soon.

Sincerely,

James R. Edwards, Jr.

Sheriff James R. Edwards, Jr.

174 Uriah Branch Way ~ Emporia, Virginia 23847
(434) 348-4200 – Phone
(434) 634-9615 – Fax
gcso@telpage.net - Email

BAXTER BAILEY & ASSOCIATES
ARCHITECTS

MEETING MINUTES

SUBJECT: Greensville County Sheriff's Office Expansion
Part 2 – Analysis of Building Deficiencies

DATE: Tuesday, March 18, 2014

ATTENDEES: Sheriff James R. Edwards, Jr. – Greensville County Sheriff's Office
Major William T. Jarratt, Jr. - Greensville County Sheriff's Office
Betsy Veliky – Greensville County Sheriff's Office
Baxter Bailey – Baxter Bailey and Associates
Zack Saunders – Baxter Bailey and Associates

Sheriff Edwards,

As a summary of our meeting of Tuesday, March 18, 2014 – we reviewed the Existing/New Spaces list dated 2/24/14 and Space Needs Diagram dated 2/26/14 with you and key staff; and found the Space Needs to be reflective of the current/future needs of the Greensville County Sheriff's Office.

One change was to be made to the documented Space Needs: whereas the Dispatch Room was described as needing space for (3) workstations and having an additional space request of 130 s.f., it more accurately needs space for (4) workstations having an additional space request of (130+64) 194 s.f.; bringing the total area of the Dispatch Room to 519 s.f. Please find attached the Space Needs Diagram which has been updated to reflect this change. Also, in the previous Memo dated 2/24/14, Dispatch is to be changed/updated to read as follows:

Existing Spaces:

3. **Dispatch** – Present Dispatch Office is a bit undersized, in that it houses a staff of (3) and a significant amount of computer/data equipment in vertical racks. If/when the computer/data equipment were to be relocated; this space should be expanded to include (4) computer workstations and additional file storage areas. Presently critical file space has been reassigned as the 3rd workstation, in a temporary fashion. *Additional space requested:* **194 s.f.**

Please feel free to give us a call at 804-343-1833 if you have any questions or comments.

Sincerely,

Zack Saunders

Attachments: (1)
Cc: Major William T. Jarratt, Jr., Betsy Veliky, Charles M. Veliky

THE PLUMMER HOUSE ● 11 EAST FRANKLIN STREET ● RICHMOND, VA 23219
(804) 343-1833 ● FAX (804) 643-8370 ● E-MAIL: jbb@baxterbailey.com

BAXTER BAILEY & ASSOCIATES
ARCHITECTS

MEETING MINUTES

SUBJECT: Greensville County Sheriff's Office Expansion
Part 2 – Analysis of Building Deficiencies

DATE: Monday, February 24, 2014

ATTENDEES: Sheriff James R. Edwards, Jr. – Greensville County Sheriff's Office
Major William T. Jarratt, Jr. - Greensville County Sheriff's Office
Betsy Veliky – Greensville County Sheriff's Office
Charles M. Veliky – Greensville County
Baxter Bailey – Baxter Bailey and Associates
Zack Saunders – Baxter Bailey and Associates

Sheriff Edwards,

Below are the highlights of the meeting held on Monday, February 24, 2014 to discuss the space deficiencies of the current Greensville County Sheriff's Office, all as a first step in our P.A.R. process for the County.

Existing Spaces:

1. **Lobby** – Size is appropriate to needs; however security glazing is called for at door sidelites and should be added. *No space addition requested:* **0 s.f.**

2. **Public Toilet** – Size/ design is satisfactory.
No space addition requested: **0 s.f.**

3. **Dispatch** – Present Dispatch Office is a bit undersized, in that it houses a staff of (3) and a significant amount of computer/data equipment in vertical racks. If/when the computer/data equipment were to be relocated; this space should be expanded to include (3) computer workstations and additional file storage areas. Presently critical file space has been reassigned as the 3rd workstation, in a temporary fashion. *Additional space requested:* **130 s.f.**

4. **Work/ Copy** – Area is satisfactory and useful but tight.
Additional space suggested: **15 s.f.**

5. **Staff Toilet** – Area is satisfactory and useful.
No space addition requested: **0 s.f.**

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(804) 343-1833 ● FAX (804) 643-8370 ● E-MAIL: jbb@baxterbailey.com

6. **Break Room** – Staff finds the Break Room to be too small and would like seating for 6 – 8 at a larger table; staff feels that a full service Kitchen with cook range is warranted. *Additional space requested:* **110 s.f.**

7. **Investigator/ Chief** – Staff finds the Investigator Chief Supervisor's Office (single occupant) to be satisfactory. *No space addition requested:* **0 s.f.**

8. **Investigator / 2 Staff - EXISTING** – Present Investigator's Office was designed for (2) work stations, is now serving (3) Investigators while space for a 4th workstation is probably needed in the near future; an increase to the size of this space and a second Investigator's Office is requested (see New Spaces below). *Additional space requested:* **36 s.f.**

9. **Vending Area** – Currently houses (2) vending machines and is deemed inadequate. Suggested to be enlarged to house (4) vending machines. *Additional Space Requested:* **21s.f.**

10. **Briefing/ Conference Room** – The present Briefing Room is too small for a work-session with full staff (approximately 35-36) assembled; thus, the Conference Room function is also affected. Staff suggests that a larger sized – adequately sized – Briefing Room would negate the need for a separate Conference Room. An enlarged Briefing Room, appropriately furnished, can/should be set up as a multi-purpose room capable of accommodating meetings, briefings, and a variety of needs. *Additional space requested:* **238 s.f.**

11. **Shift Offices** – Presently there are (4) Shift Offices of approximately 105 s.f. each. These four offices are set up to handle (2) Deputies per shift. More currently (3) Deputies per shift are assigned, and soon possibly (4) Deputies will use each of these (4) Offices; this in turn calls for (4) well-equipped workstations each, rather than the (2) now provided. These new workstations should be approximately 9'-0" long complete with vertical Locker (1'-0"); full-height Lateral File Cabinet (3'-0"); and a Work/ Table Top (5'-0") with under-counter drawers and overhead open bins/shelving. *Additional space requested:* **300 s.f.**

12. **Electric/ Data Room** – Due to advances in technology this room is now crowded and should have Data/ IT removed/ relocated, leaving it assigned as Electric only (see New Spaces below for a new Data Room). *No space addition requested:* **0 s.f.**

13. **Janitor's Closet** – Area is satisfactory & useful. *No space addition requested:* **0 s.f.**

14. **Old Data/ Storage** – This space not now used for Data due to size constraints; it now serves as General Storage only. *No space addition requested:* **0 s.f.**

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15. **Chief Deputy** – The Chief Deputy's Office is a bit small @ 138 s.f. and due to work-load & document retention this space should be enlarged.
Additional space requested: **52 s.f.**

16. **Auxiliary Office** – This space is now used for general and document storage due to lack of adequate storage space within the building. This space should be retained and returned to its original function.
No additional space requested: **0 s.f.**

17. **Civil Process** – Is set up for (2) staff members at (2) modest workstations. This space should be expanded to meet the needs of two staff members at enhanced workstations with file storage space, similar to Shift Offices.
Additional space requested: **28 s.f.**

18. **Sheriff's Office** – The present Sheriff's Office is satisfactory in size.
No additional space requested: **0 s.f.**

19. **Gun Storage/Secure** – The present Gun Storage Room is satisfactory.
No additional space requested: **0 s.f.**

20. **Sheriff's Secretary** – The present Secretary's Office is satisfactory in size.
No additional space requested: **0 s.f.**

21. **Locker Room/ Evidence Room** – Original Locker Room, while well equipped as individual storage for Officers' gear, etc., has been converted to Evidence Storage with the staff lockers devoted to securing evidence storage. The need for added Evidence Storage space is addressed herein (see New Spaces below). The need for Locker Room space remains and needs to be enlarged somewhat. *Additional space requested:* **38 s.f.**

22. **Evidence Storage** – Existing Evidence Storage Room is undersized and lacks capacity for computer/scanner station. Staff suggests that the Evidence Storage be significantly enlarged.
Additional space requested: **226 s.f.**

23. **Booking** – The Booking Room is considered too small and in an ideal situation it could/should be enlarged. *Additional space requested:* **26 s.f.**

24. **Women's Toilet** – Presently the Women's Toilet is sufficient to the needs of the Existing Building/ no change. *No additional space requested:* **0 s.f.**

25. **Men's Toilet** – Presently the Men's Toilet is sufficient to the needs of the Existing Building/ no change. *No additional space requested:* **0 s.f.**

THE PLUMMER HOUSE ● 11 EAST FRANKLIN STREET ● RICHMOND, VA 23219
(804) 343-1833 ● FAX (804) 643-8370 ● E-MAIL: jbb@baxterbailey.com

New Spaces:

- **Dispatch Storage** – Currently there is inadequate file storage space in the Dispatch Room. Providing adequate space, (while adding additional space to the Dispatch Room per Existing Spaces above) would allow for the Dispatchers to conduct daily operations smoothly and efficiently.
  Area to be: **48 s.f.**

- **Investigator/ 2 Staff - NEW** – While the existing Investigator Office is undersized and is suggested to be increased (see Existing Spaces above), a second Investigator Office is requested. This new space is to be designed to accommodate (4) workstations to meet both current and anticipated/ future needs. *Area to be:* **170 s.f.**

- **Data/ Communication Room** – A new Data/Communications/IT Room is suggested. This room would receive equipment from existing Electrical Room and the equipment now in the Dispatch Room as well as other new equipment. *Area to be:* **200 s.f.**

- **Interrogation Rooms** – Currently the building lacks a sufficient space to conduct interrogations. A new Interrogation Room, consisting of a pair of adjacent spaces divided by a two-way mirror is requested.
  Area to be: **192 s.f.**

- **Holding Cells** – While no need for Holding Cells was expressed during the original planning for the Sheriff's Office building; staff suggested that the provision for a secure lockup would meet current needs while significantly enhancing the facility's security overall. *Area to be:* **336 s.f.**

- **Records Room** – Currently there is inadequate space for central records storage. Staff noted that numerous spaces including the Auxiliary Office and the Attic are being used to house critical records. A new, centrally located Records Room is suggested. *Area to be:* **180 s.f.**

- **Men's Toilet # 2** – As the overall building area increases, we anticipate that a second Men's Toilet facility will be needed. *Area to be:* **80 s.f.**

- **Physical Fitness Room** – Staff suggested that the provision of a Physical Fitness Room would increase health and wellness among staff.
  Area to be: **600 s.f.**

- **General Storage # 1** – Currently, the building generally lacks sufficient storage space. Providing new areas for storage throughout the building would increase the functionality of other usable spaces. *Area to be:* **80 s.f.**

THE PLUMMER HOUSE ● 11 EAST FRANKLIN STREET ● RICHMOND, VA 23219
(804) 343-1633 ● FAX (804) 643-8370 ● E-MAIL: jbb@baxterbailey.com

- **General Storage # 2** - Currently, the building generally lacks sufficient storage space. Providing new areas for storage throughout the building would increase the functionality of other usable spaces. *Area to be:* **80 s.f.**

- **Basement/ Off-Site Long Term Storage** – Regarding long-term document/record storage, the building currently lacks sufficient space. The provision of a new storage space to alleviate this issue is suggested. *Area to be:* **400 s.f. +/-**

Other:

- **Parking** – Present Parking @ 28 spaces is from time to time too tight. It would be adequate to the operation of the facility to have a designated parking area of 45/46 spaces. *A difference of:* **18 spaces**

Please have the attendees review the noted and if any items should be added or amended, please let us know at your earliest convenience.

Sincerely,

Zack Saunders

Cc: Major William T. Jarratt, Jr., Betsy Veliky, Charles M. Veliky

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(804) 343-1833 ● FAX (804) 643-8370 ● E-MAIL: jbb@baxterbailey.com